

MECCANO[®] Magazine

22½p

QUARTERLY

Vol. 59 No. 4 MECCANO MAGAZINE FOUNDED 1916

October 1974

SHADES OF WINTER

IT SEEMS only yesterday that I threw off my winter woollies, so to speak, and settled down to enjoy the delights of summer, yet the truth is that the summer has already come and gone (at least in the northern half of the world) and winter is again upon us.

Winter, of course, is a good season for Meccano Modellers; with the long dark evening outdoors, model-building is an ideal way of spending our time really constructively indoors, in the warmth and comfort of our homes. Besides the modellers, however, this season – or at least the part of it before Christmas – is also the busiest, most important time of year for Meccano Limited. It is between now and Christmas that sales are at their peak and, to attract those sales, it is during this period also that the Company's promotional activities are heaviest.

KELLOGG COMPETITION

Needless to say, all our products will be promoted in various ways in the coming weeks and I am sure you would not thank me for listing them all here, but there is one particular Meccano promotion now taking place that I believe will be of interest to MMQ readers. This is a big 'Age of the Truck' Competition being run throughout the U.K. by the Kellogg Company in which no less than 2,751 Meccano Highway Multikit sets are being offered as prizes. The Competition is being featured on 12 million Rice Krispies packs and, as the above picture shows, Multikit models are prominently featured on the back of each pack – in full colour – while a Meccano-orientated contest announcement appears on the front.

In my opinion, this particular promotion might well turn out to be one of the most effective in our recent history. We are not *advertising* Meccano, in a hard-sell sense, and so people cannot be put off by this, and it is a fact that most people, either consciously or unconsciously, read the breakfast cereal packs as they shovel down the 'goodies'. Kellogg's Rice Krispies are amongst the most popular breakfast cereals – witness the 12 million packs – therefore millions of hungry breakfast-eaters cannot fail to 'digest' the Meccano name! In addition, Kellogg themselves will be featuring the pack and competition in a nationwide television advertising campaign, so the name



How to keep Meccano in the public eye! Samples of the 12 million Kellogg's Rice Krispies packs on which the Super Highway Multikit is featured to superb effect.

should be seen in virtually every home in Britain. How's that for a promotion?

EXHIBITION SUCCESSES

On a different subject, I was privileged to attend the two Meccano Exhibitions mentioned in July's Editorial – the Midlands Meccano Guild's Show at Stoneleigh and the 'open' exhibition at Henley-on-Thames – and I am delighted to confirm that both were highly successful. More detailed reports on the shows appear inside this issue, but I would like to take this opportunity, here, of expressing my personal thanks to organisers and exhibitors for the friendly welcomes they gave me. I would also like to extend the Company's thanks to all Meccano Clubs and individuals around the world who have done so much to promote the hobby by exhibiting their models, either at organised shows, in dealers' windows, or even to their own circle of acquaintances. Every little helps!

Finally, as this is the last MMQ before Christmas, I would like to wish all our readers a Merry Christmas and a very happy New Year.

The Editor

EDITORIAL DIRECTOR: J.D. McHard

EDITOR: C. J. Jelley

ASSISTANT EDITOR: M. K. Peddie

PUBLISHED FOUR TIMES PER YEAR IN
JANUARY, APRIL, JULY AND OCTOBER

CONTENTS

- | | |
|------------------------------------|------------------------------|
| 86. Meccano Extravaganza. | 96. Festival '74. |
| 88. Anti-tank Gun and | 97. Meccano Miscellany. |
| Transporter. | 98. Ding Ding Tramcar. |
| 90. Collectors' Corner. | 101. Dinky Toys News. |
| 92. Among the Model-builders. | 102. Clock Strike Mechanism. |
| 94. How Long is a Piece of . . . ? | 104. Meccano Club Roundup. |

EXTRAVAGANZA

by The Editor

EXTRAVAGANZA is no exaggeration! The display of 'Meccanorama' at the Meccano Exhibition, held in Henley-on-Thames' Town Hall at the end of August, was, for the third consecutive year, a truly amazing event! On the 'public' day (Saturday 31st August) thousands of visitors packed the exhibition rooms and gaped with astonishment at the hundreds of models on show; models built and displayed, not by professionals, but by 'ordinary' Meccano enthusiasts (if any Meccano enthusiast can be called 'ordinary'!).

Big models and little models, giant masterpieces and tiny simplicity miniatures – all were there in profusion. And, whatever the preference, there was something for everyone; every conceivable subject was covered, as well as some that you wouldn't have thought possible!

Meccano history was also well represented, not only in the models themselves which, between them, featured colour-schemes from every colour period in Meccano history, but also thanks to 'The Meccano Collection', admirably displayed by Jim Gamble of Kinoulton, near Nottingham. Jim's collection is an exhibition in itself, consisting of equipment and literature dating from the earliest days of the company up to the present day.

The major attractions, however, were of course the models, which not only packed the main exhibition hall, but were also to be found in the passageways, on the stairs, in the foyer, on window ledges, – in fact anywhere there was space for them! They were virtually all provided by individual modellers and Meccano Clubs, the only exceptions being a large Carousel, the Servetti Beach Buggy (featured in the April MMQ) and an automatic Meccano-

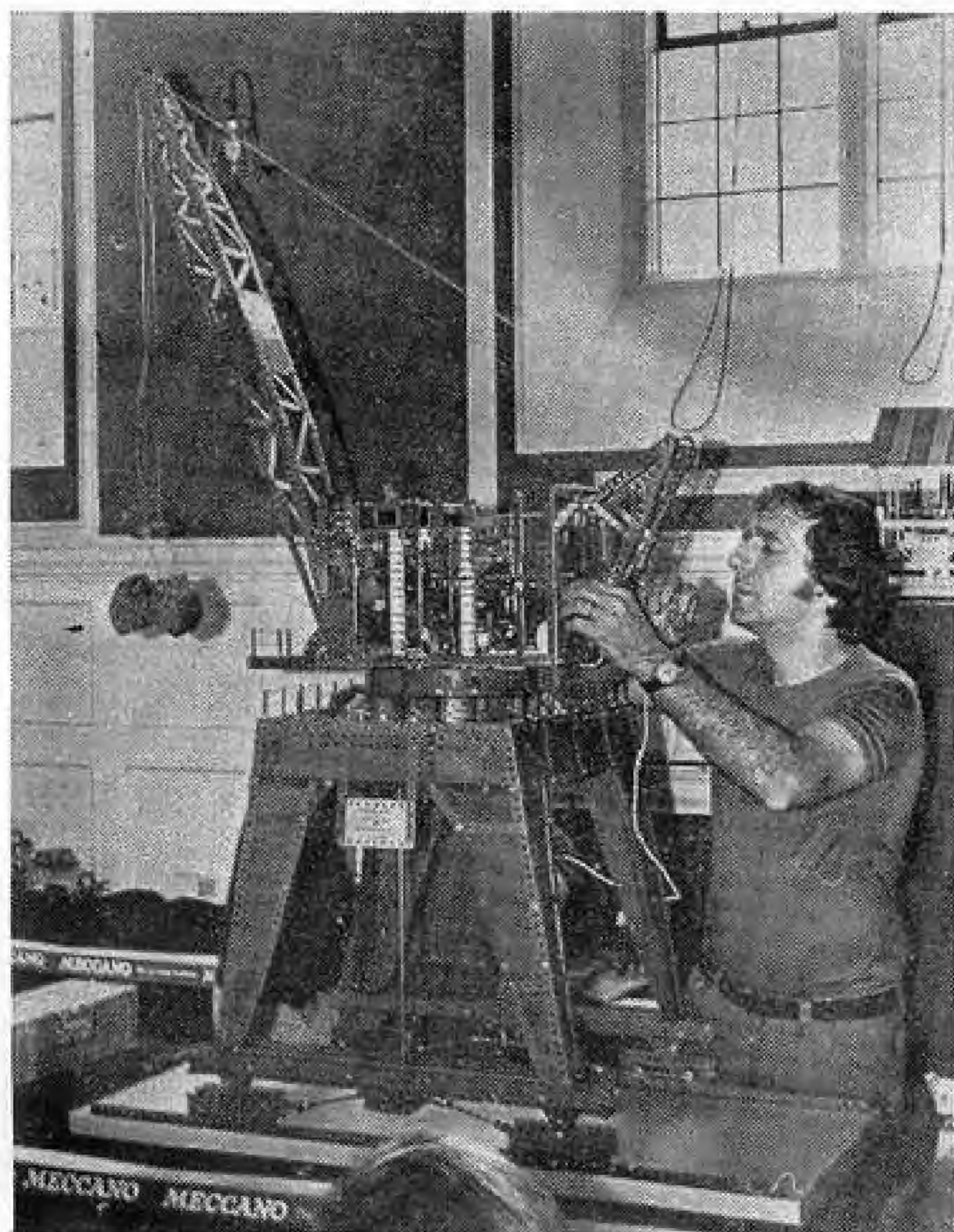
graph loaned by Meccano Limited and displayed on the stage, and two or three smaller models included in a Company display of current products in one of the ante-chambers.

And this is where I find myself in a dilemma. Practically every one of the models at the Show deserves a mention here, either for ingenuity, complexity, subject matter, or even simplicity, yet there just is not room for it – not only in these two pages but in the whole magazine! With the hundreds of models involved, individual mention of them all is impossible, yet it would be grossly unfair to mention some and not others, so what am I to do?

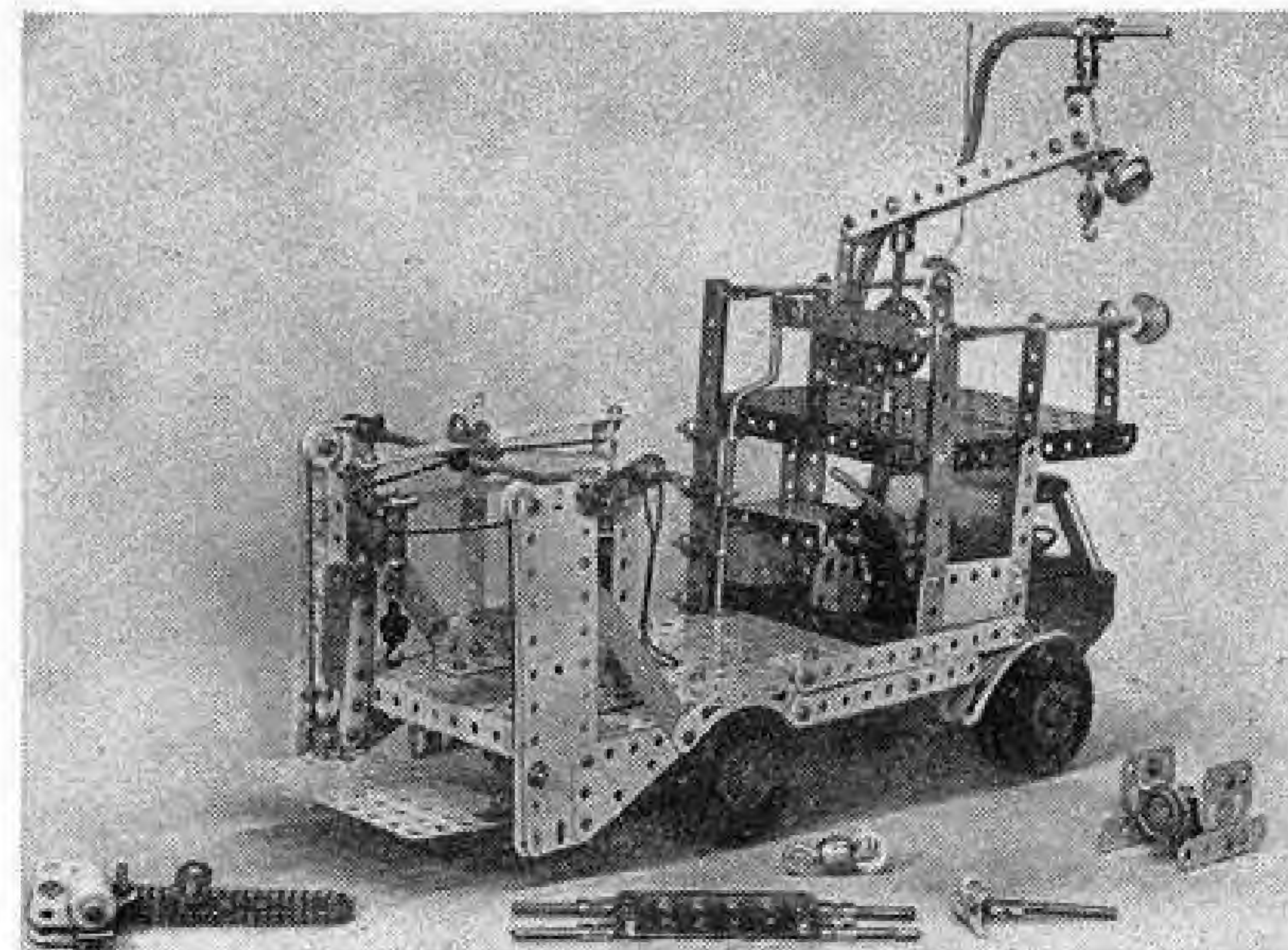
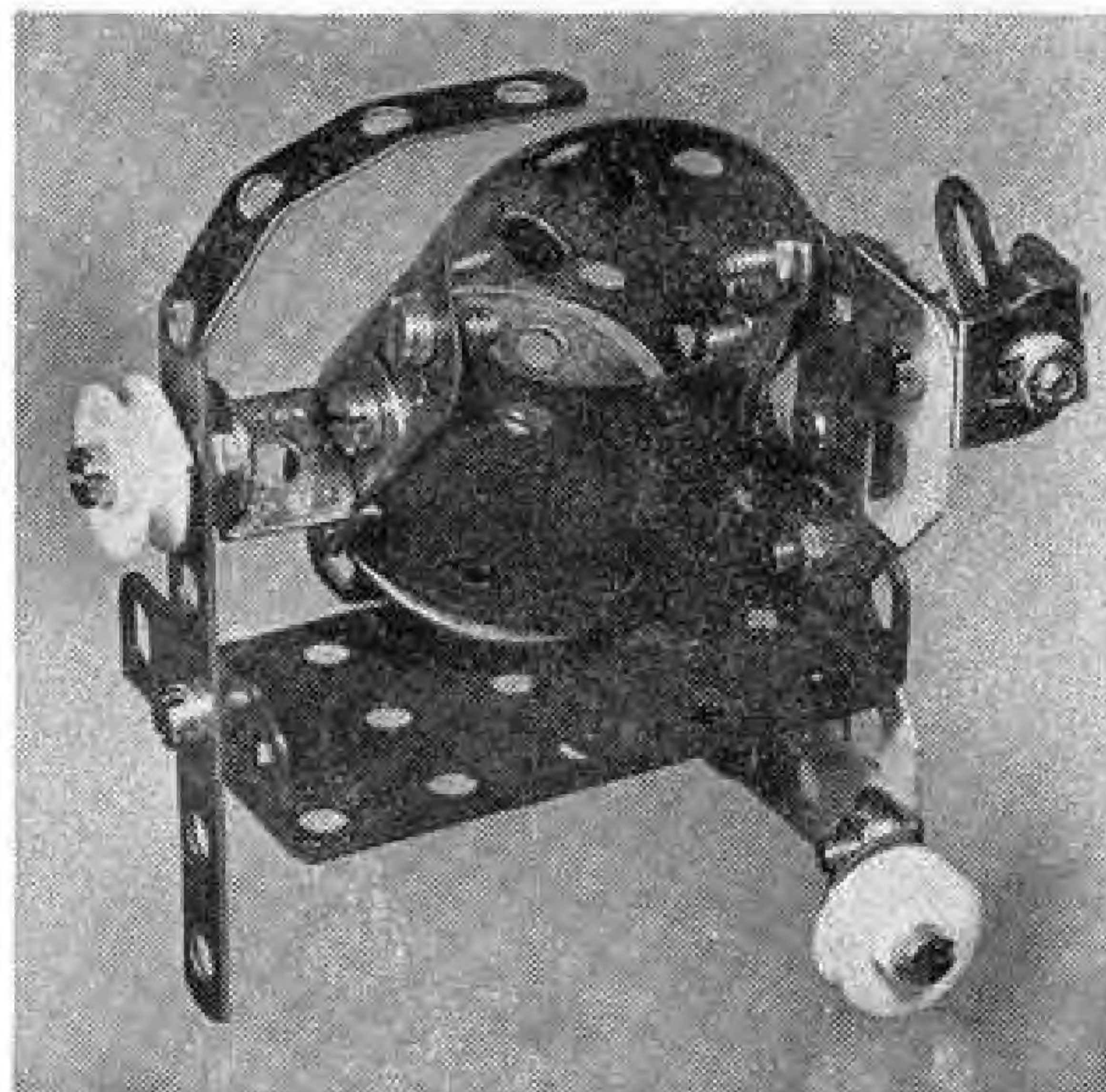
Circumstances, in fact, have provided the solution. At the Exhibition, I took plenty of photographs, but unfortunately, because of difficult lighting conditions and my own lack of experience with the camera, only a few prints turned out sufficiently well for reproduction. Rather than single out models for 'Editorial Mention' therefore, I am including a selection of these usable illustrations (and some supplied by other photographers) but I implore readers whose exhibits do not appear to accept that this is a result of the situation – *not* because their models are unsuitable.

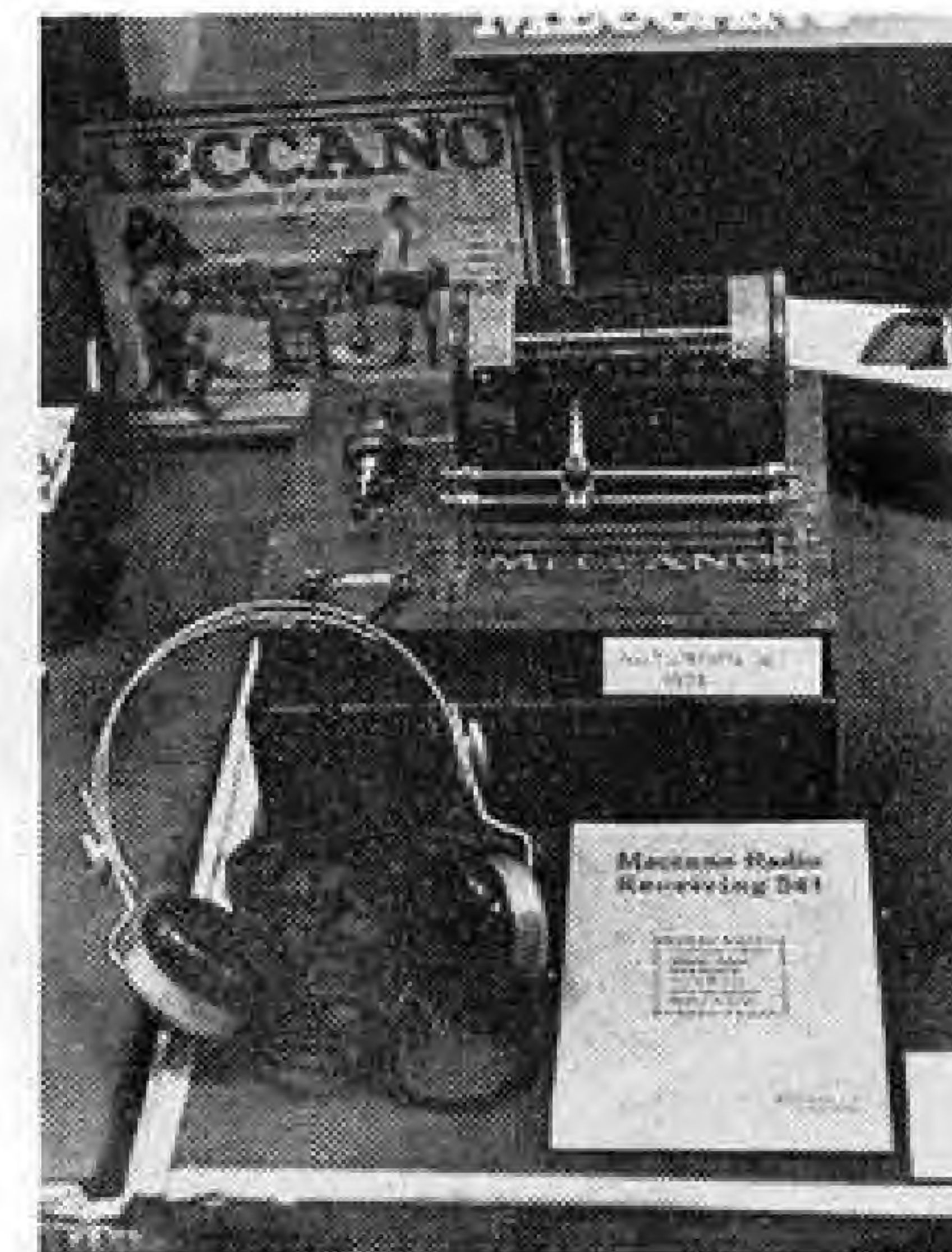
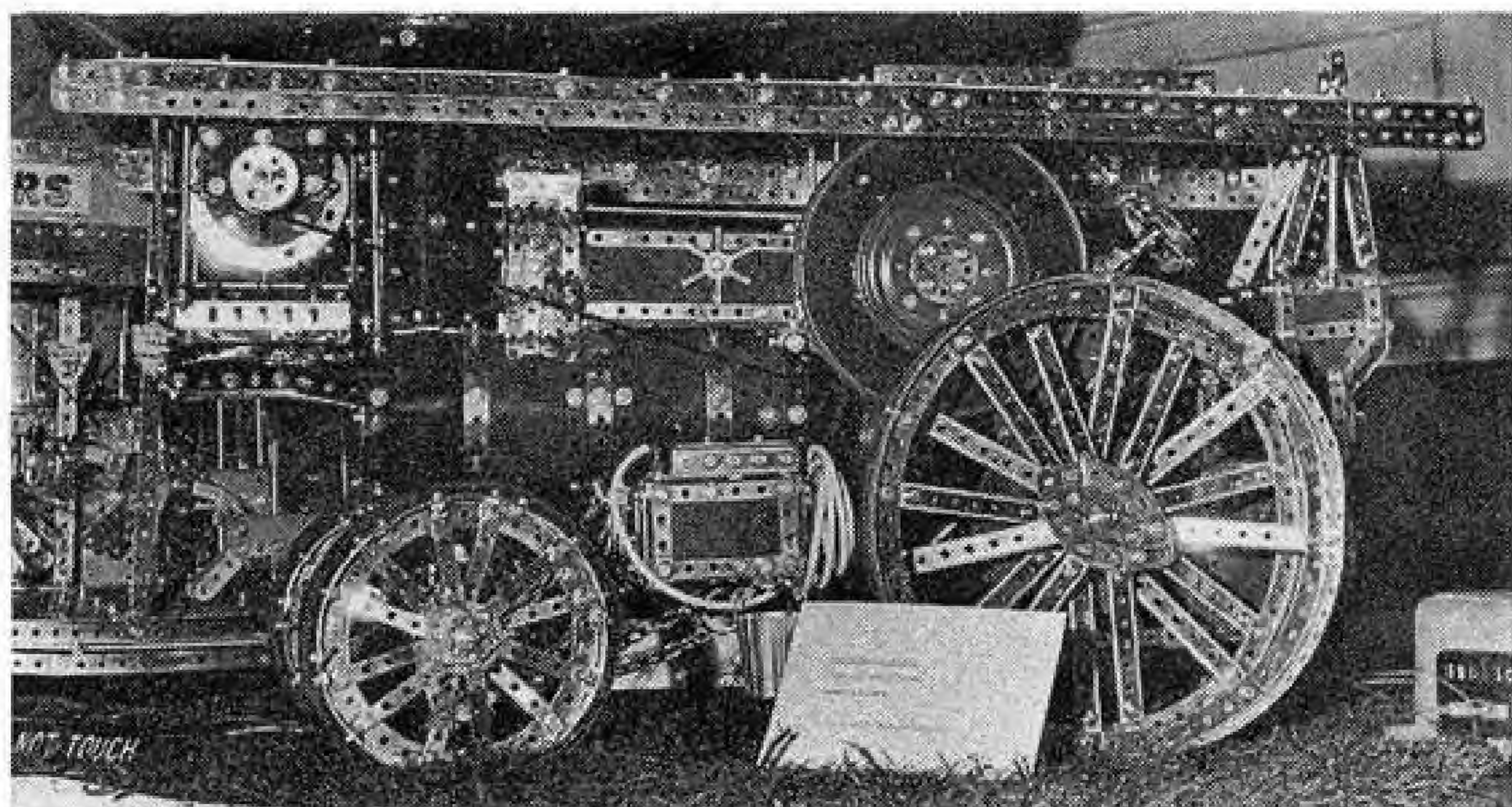
COMPETITION RESULTS

One thing I must cover, however, are the results of several modelling competitions which were held during the Exhibition. The first of these, titled 'Pocket Meccano plus One', asked entrants to build a model from the contents of one Pocket Meccano Set, with the addition of



Pictured left, Peter Wilson of Westcliffe-on-Sea adjusts his radio-controlled Dockside Crane during the 'Meccano Extravaganza' at Henley. Centre, the Concrete Mixer which won a prize for 7 year-old Francine Coles of Bleasby, Nottingham in the 'Pocket Meccano Plus One' Competition. Right, the Motorway Emergency Unit with which 9 year-old Ian Ellison of Cublington, Leamington Spa was a joint-winner in the 'Emergency Services' Competition. It shows a very high standard of modelling, considering Ian's age.





1, Showman's Traction Engine by Keith Orpin of Stevenston. 2, the Multigun Half Track with which 12 year-old Gordon Platt of Henley won the 'Super Multikit' Competition. 3, the extremely rare Meccano Crystal Set included in Jim Gamble's 'Meccano Collection'.

one extra standard Meccano part of their own choice, and it proved very successful with a large entry even from adults. The results in the various categories were as follows:

ADULT: Bill Roberts, Godalming, Surrey, with his 'Chair-o-Plane';
AGE 14-18: John Briggs, Wollaton, Nottingham, with his 'Monoplane';
AGE 11-13: Michael Drinkwater, Maidenhead, Berks., with his

'Ski Rescue';
AGE 7-10: joint winners Francine Coles, Bleasby, Nottingham, with her 'Concrete Mixer' and Ian Ellison, Cublington, Leamington Spa, Warks., with his 'Chain Saw'.

A more advanced competition carried the title 'Emergency Services' and required entrants simply to build a model of any size under this description. An over-whelming entry was received for this competition and I am told it made life extremely difficult for the judges! Again, the competition was split into age groups and the winners in the various groups were as follows:

AGE 14-18: joint winners Keith Orpin, Stevenston, Abingdon, with a '1942 Military Police Willys Jeep' and Stephen Ashford, Minehead, Somerset with a 'Vintage Fire Engine';
AGE 11-13: joint winners, Mark Dawes, Bicester, Oxon with 'Fire Fighting Fred' (an appealing Mec-

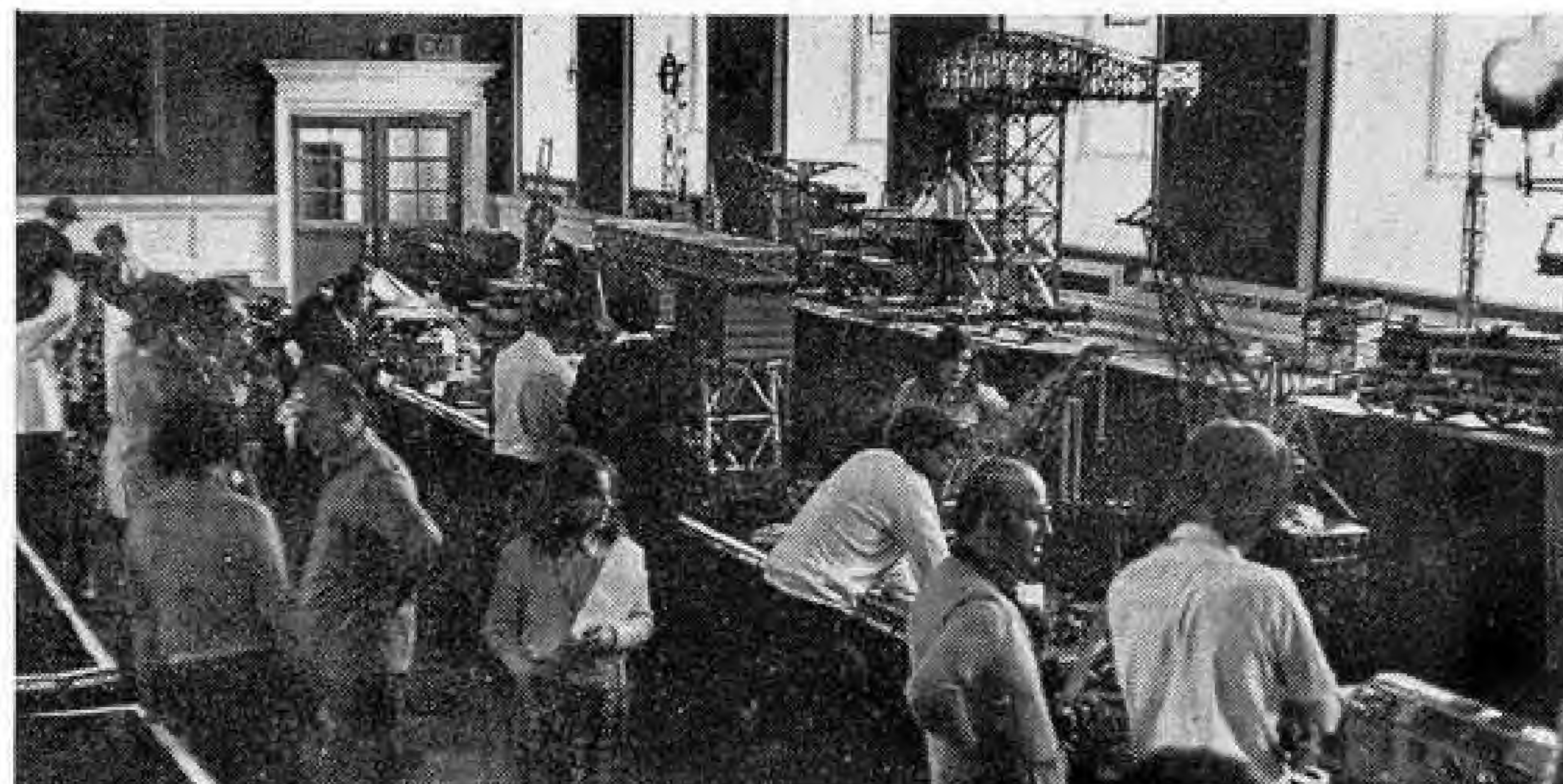
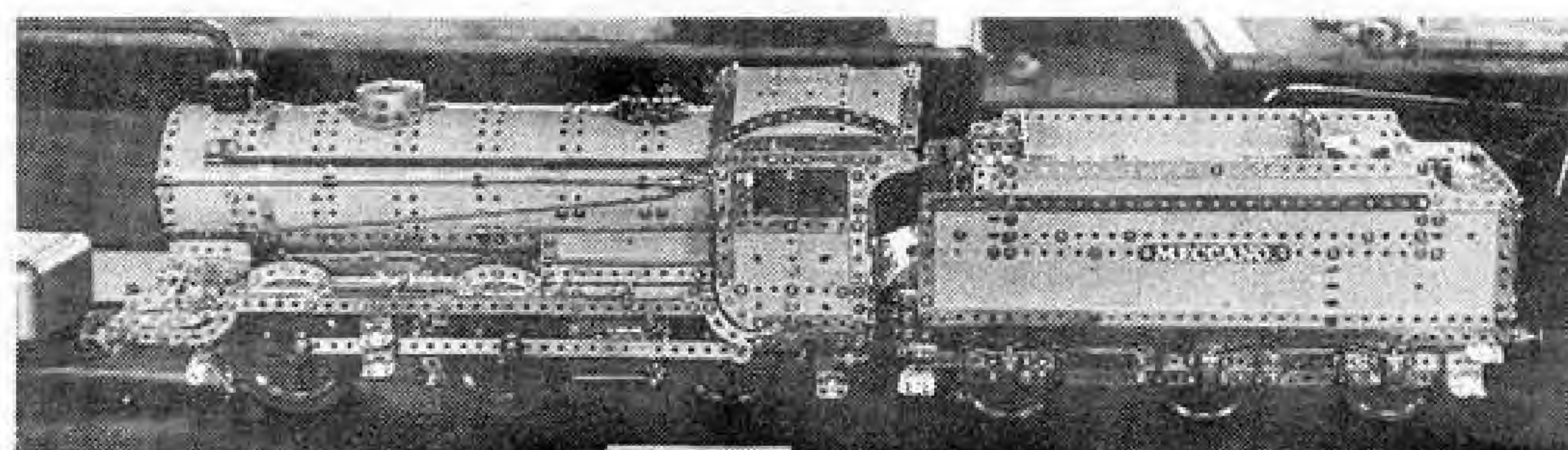
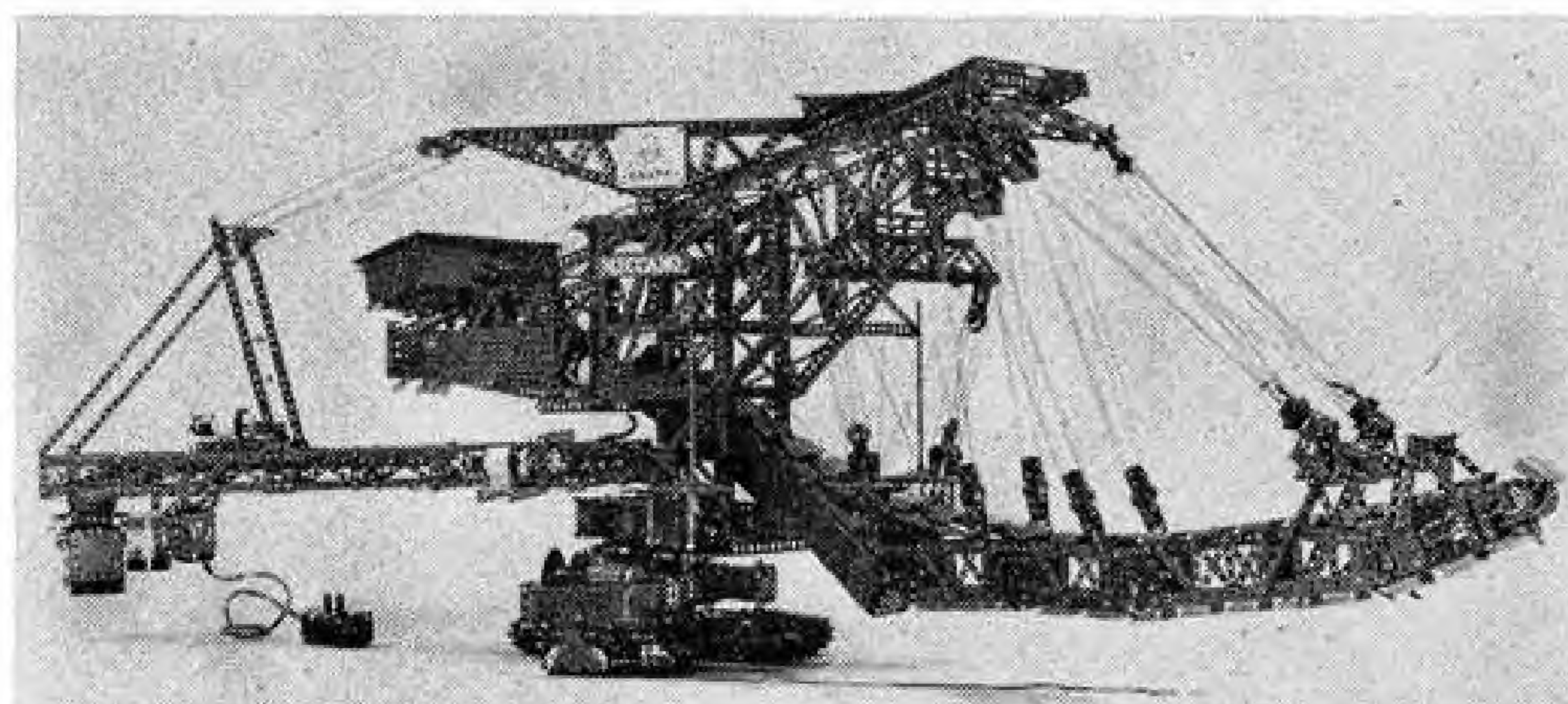
cano Robot'), and Kim Ball, Wargrave, Berks with an 'Early Field Ambulance';
AGE 10 AND UNDER: joint winners Colin Robb, Henley-on-Thames, with a 'Break-down Truck' and Ian Ellison, Cublington, Leamington Spa, with a Motorway Emergency Unit'.

Two other competitions were also held under the titles of 'Super Multikit' and 'Plastic Meccano', although it should be said that entries in both these were comparatively small in number. In the former competition, competitors could combine parts from a Meccano Multikit with Standard Meccano Parts to produce a superior model. The winner was Gordon Platt of Henley-on-Thames who in fact received equal marks for two models — A 'Multigun Half Track' and a 'Multitruck Mark 3', both of which took the judges' fancy to an equal extent.

The Plastic Meccano competition was open only to entrants aged 7 years and under and it was won by Alistaire Bloundele of Henley-on-Thames, who, believe it or not, is only just 4 years old! His model was titled 'Tyeannosaurus' and was based on the pre-historic monster of the same name. Alistaire has an absorbing interest in these creatures and I am told he has even visited the Natural History Museum in London to study the subject. See what I meant earlier about subjects you wouldn't think possible!

CREDITS

A final word of congratulations and thanks is due to the organisers, helpers and exhibitors at the exhibition for the tremendous show they presented. The Exhibition was sponsored by M. W. Models of Henley and was organised by the sole proprietor, Mr. Geoff Wright, with the able support of Alf Reeve of Maidenhead (responsible for design and display) and John Hanby of Didcot (stand erection) assisted by Tim Fisher, Tom Marlow and others, including Mr. Fred Foster our own transport driver, whom the organisers have particularly asked me to mention. The model arrangement was supervised by Alf Reeve and Dennis Thomas and the competition judging was carried out by Mr. Esmond Roden of the Midlands Meccano Guild, Mr. Tony Homden of the Holy Trinity Meccano Club and Messrs. Geoff Wright and Alf Reeve



4, a superb giant Opencast Coal Mining Machine built to 1/50th scale by Mr. Syd Wise of Windsor. 5, an excellently scaled L.N.E.R. J39 0-6-0 Tender Locomotive by Christopher Reeve of the Henley Society of Junior Meccano Engineers. 6, viewed from the stage, one part of the exhibition nears completion on 'Pre-view Day'. This year, exhibitors themselves had chance to look around.

in their capacity as members of the Henley Society of Meccano Engineers. The prizes were presented by Mr. W. B. Warncken, Sales Director of Meccano Limited.

Special thanks are also due to Mr. Roy Hallsworth, who, at very short notice, provided a display of historic Dinky Toys, and Mr. Brian Wright who provided a large working Hornby Clockwork Railway layout which attracted many visitors. The layout was operated by Ian Brown with a band of enthusiastic 'winder-uppers'.

Perhaps the biggest thanks of all, however, go to the many Clubs and individuals who between them, provided such an enormous quantity of fascinating models and who gave up their time to demonstrate them so well to the visiting thousands. It is to them that the lion's share of the credit is due for the record success of the Exhibition.

MARK DAWES designed it – ‘**SPANNER**’ describes it:

ANTI-TANK GUN and CARRIER

AN ARMY MULTIKIT MODEL

NEVER LET it be said that the MMQ does not keep its word! In the July Editorial, we illustrated a Tracked Transporter with Anti-Tank Gun designed from an Army Multikit by Mark Dawes of Bicester, Oxon, and we promised that we would give full building instructions this issue. True to our promise, here they are, but before describing construction, I would like to take a moment to explain why we were so impressed with the model when we first saw it at last year's Henley Exhibition.

To begin with, although the model is built from only one set, it is really

two models in one as the Gun and Transporter are separate constructions. On such "double" occasions there is often a tendency to overstretch the capabilities of a set and end up with two visually ineffective, insubstantial units instead of one good, solid model, yet Mark has succeeded in keeping substance and effective realism in both his units. He has also put the parts in the Army Multikit to very good use by fitting tracks to the Transporter and Wheels to the Gun, thus using both traction systems in the one model. Add to this the fresh originality of the choice of subject and the fact

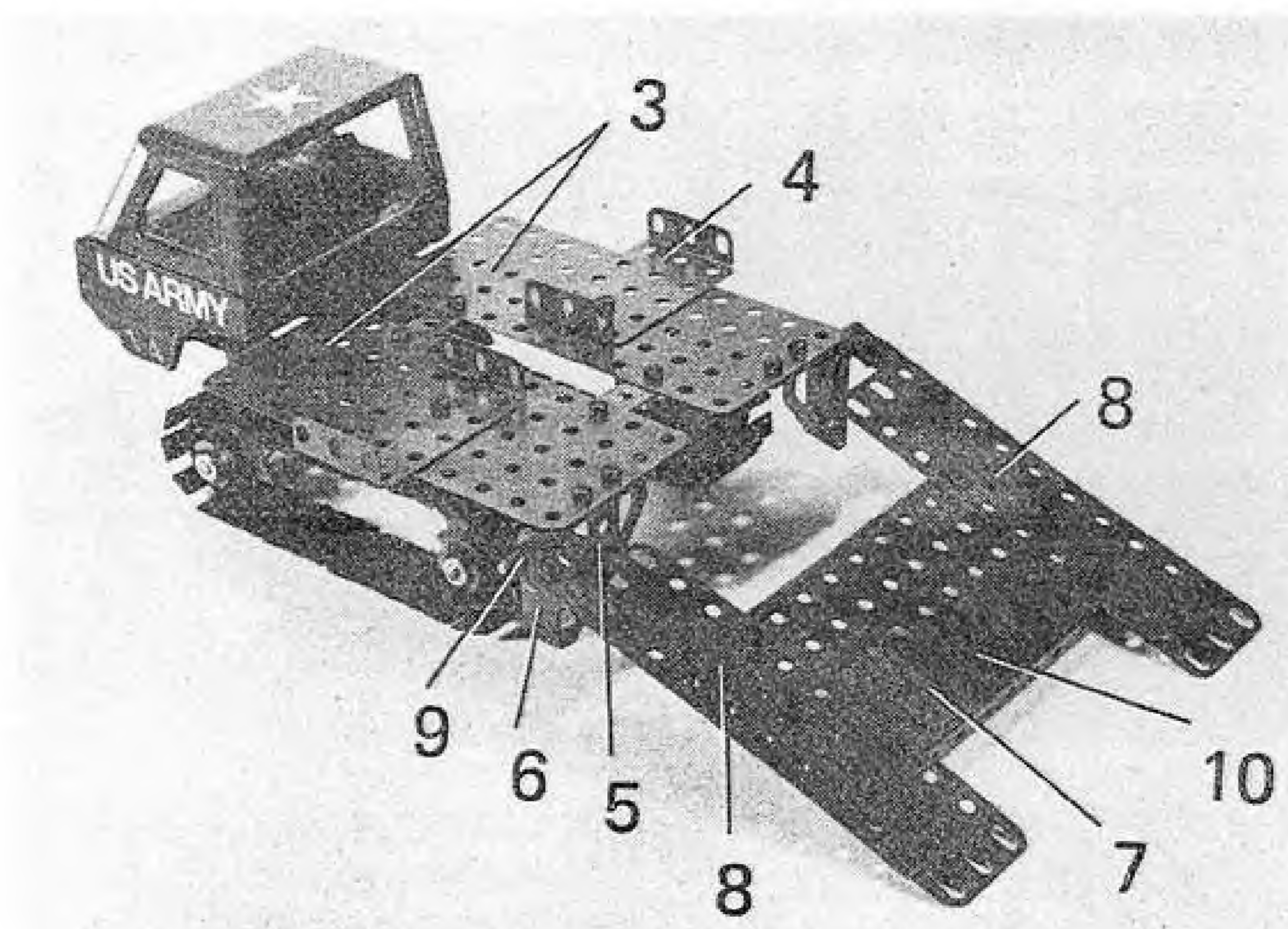
that Mark was only 12½ years old at the time he designed the model and you have many good reasons for being impressed.

CONSTRUCTION

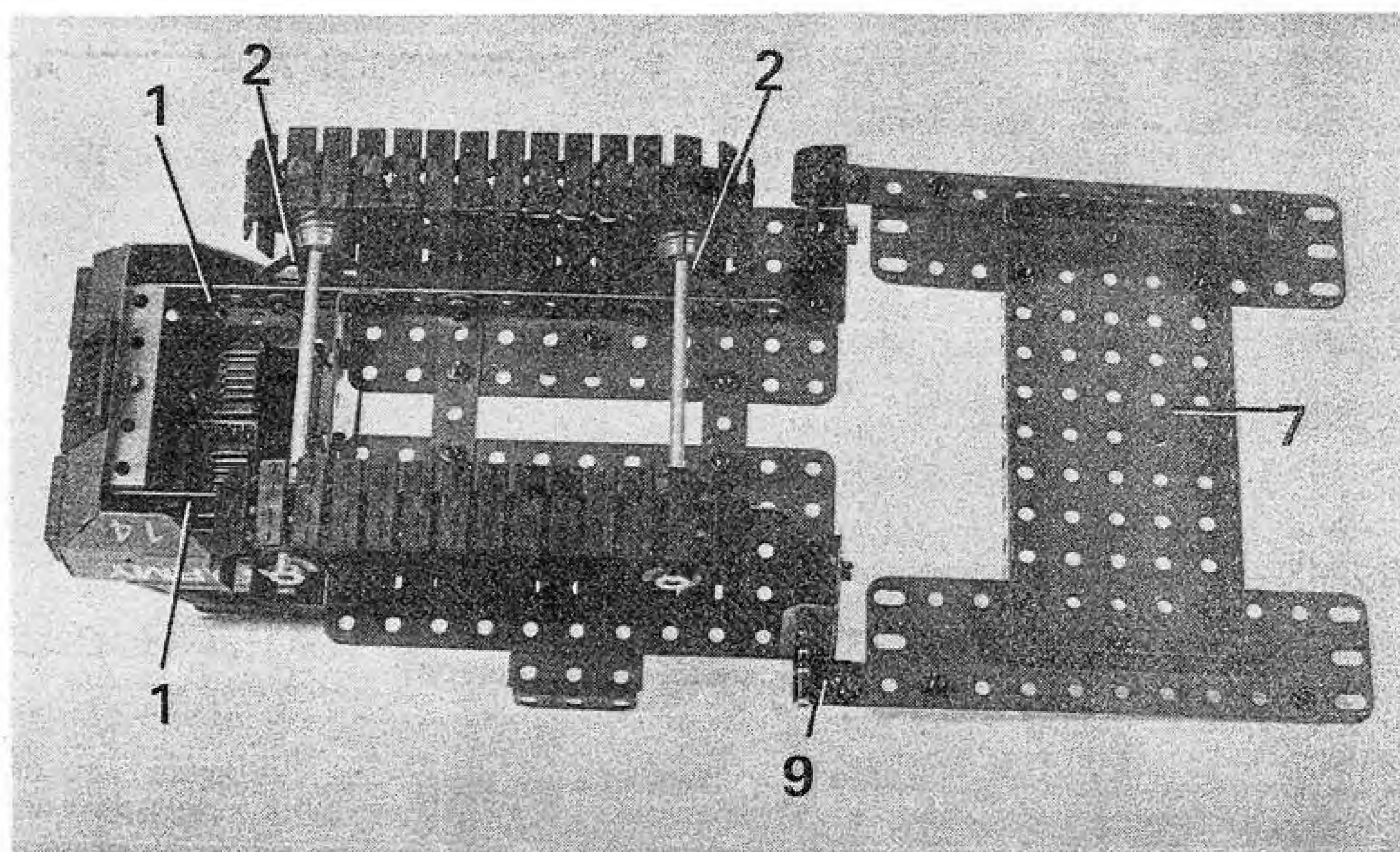
To get down to brass tacks (or at least green plates!), construction is not difficult. Dealing first with the Transporter, the chassis is provided by two 7½" Strips 1 connected together in the positions shown by four 2½" x ½" Double Angle Strips. Note that the front Double Angle Strip is positioned lugs upwards, the second Double Angle Strip lugs rearward and the third and fourth Double Angle Strips lugs downward. The Bolts fixing the second and fourth Double Angle Strips in place also help to fix four Flat Trunnions 2 to Strip 1 to serve as the axle supports.

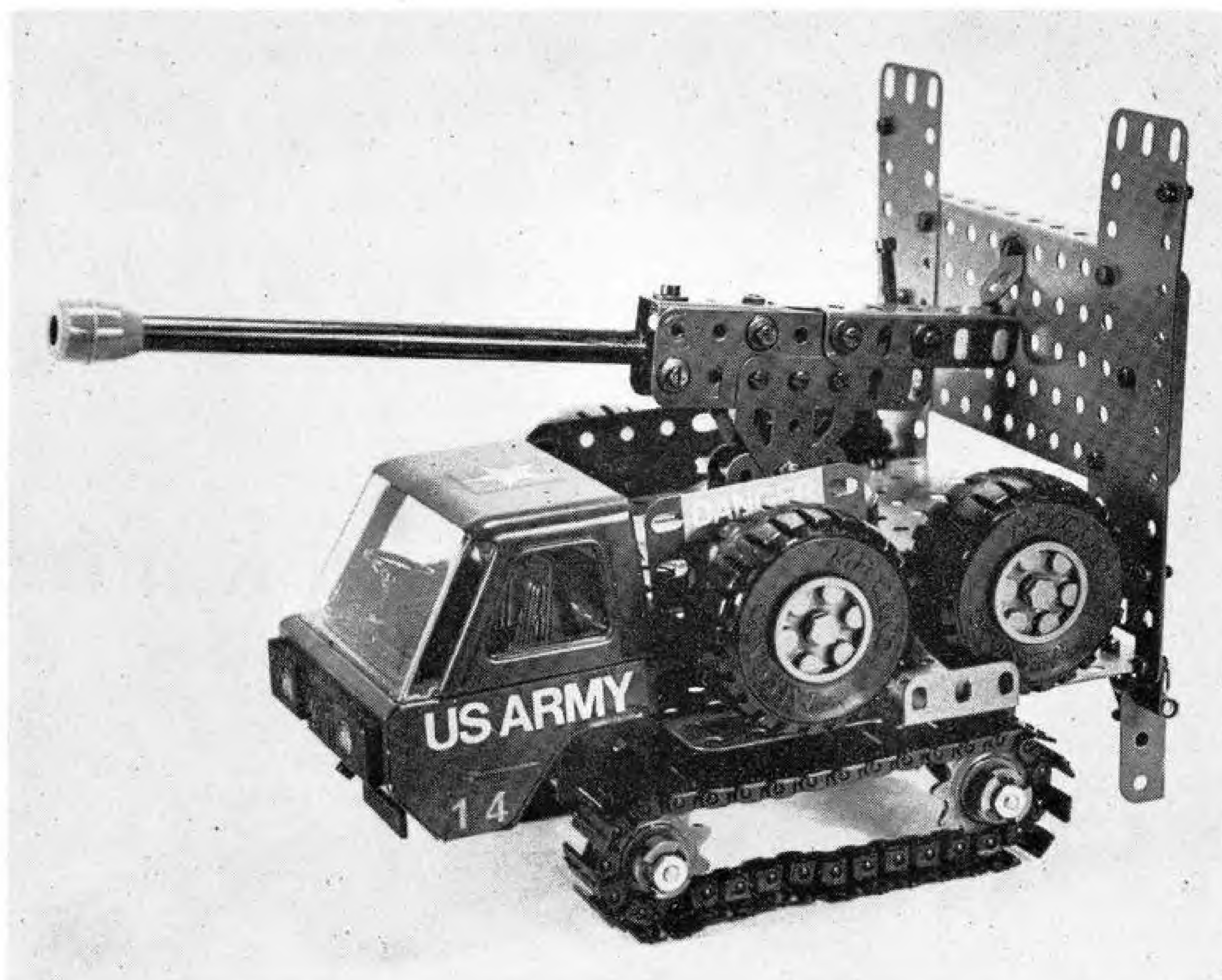
The Cab Unit included in the Multikit is next fitted with its windows, seat moulding and radiator grille, at the same time fixing an Obtuse Angle Bracket to the inside of the cab with the lower radiator securing Bolt. The completed unit is then fixed to the chassis, the Obtuse Angle Bracket being bolted to the centre of the front Double Angle Strip and the rear cab lug being bolted direct to the second Double Angle Strip.

Bolted to the top of the two rear Double Angle Strips are two 5½" x 2½" Flat Plates 3, to each of which a 2½" x 1½" Flanged Plate 4 is bolted in the position shown to later serve as a wheel guide for the Anti-aircraft Gun. Attached to the rear end of each Plate 3 is a Trunnion 5, to which another Trunnion 6 is attached through its apex hole in such a way that its Base Flange is positioned vertically. The upper hole in this Flange serves as a swivel point for the loading ramp which is built up from a 5½" x 2½" Flanged Plate 7, to which two 5½" x 1½" Flexible Plates 8 are bolted. Each of these latter Plates is underlaid along its outer edge by a 5½" Strip, projecting one hole forwards. Bolted to this projecting end is a Right-angled Rod



Left: a rear general view of the Transporter with the loading ramp lowered. Although only a comparatively small number of parts are used, the vehicle still has a substantial appearance. Below: an underside view of the Transporter chassis and track arrangements.





The Transporter with Anti-Tank Gun loaded aboard for travel.

and Strip Connector 9 which carries a 1" Rod and it is this Rod which locates in the vertical Flange of Trunnion 6 to serve as the pivot. An Obtuse Angle Bracket 10 is secured to the top of Flanged Plate 7 through its outer row centre hole, this Bracket serving as a securing catch to hold the ramp in place for travelling when the Gun is being carried.

Each crawler track consists of 31 Track Links carried on 10-teeth driving Sprockets. The Sprockets are carried on the length of plastic rod included in the Multikit, these in turn being mounted on 5" Rods journaled in the apex holes of Trunnions 2. Collars hold the Sprockets in place.

ANTI-TANK GUN

Turning to the Anti-Tank Gun itself this is built up from two 3½" x 2½" Flanged Plates 11, connected end-to-end by two crossed-over 5½" Strips bolted diagonally to the underside of the Plates. Two Trunnions 12 are then fixed, base flanges upwards, to a Wheel Flange by ½" Bolts, the same Bolts also being used to fix the Wheel Flange to the top of Flanged Plates 11 just forward of centre. The Bolts actually pass through the third holes in from each side in the rear row of holes in the forward Flanged Plate. Bolted to each side flange of this forward Plate is a 2½" x 1½" Flexible Plate 13, then the axles are journaled in the

centre holes in the flanges of both Plates and the Multikit Wheels are added.

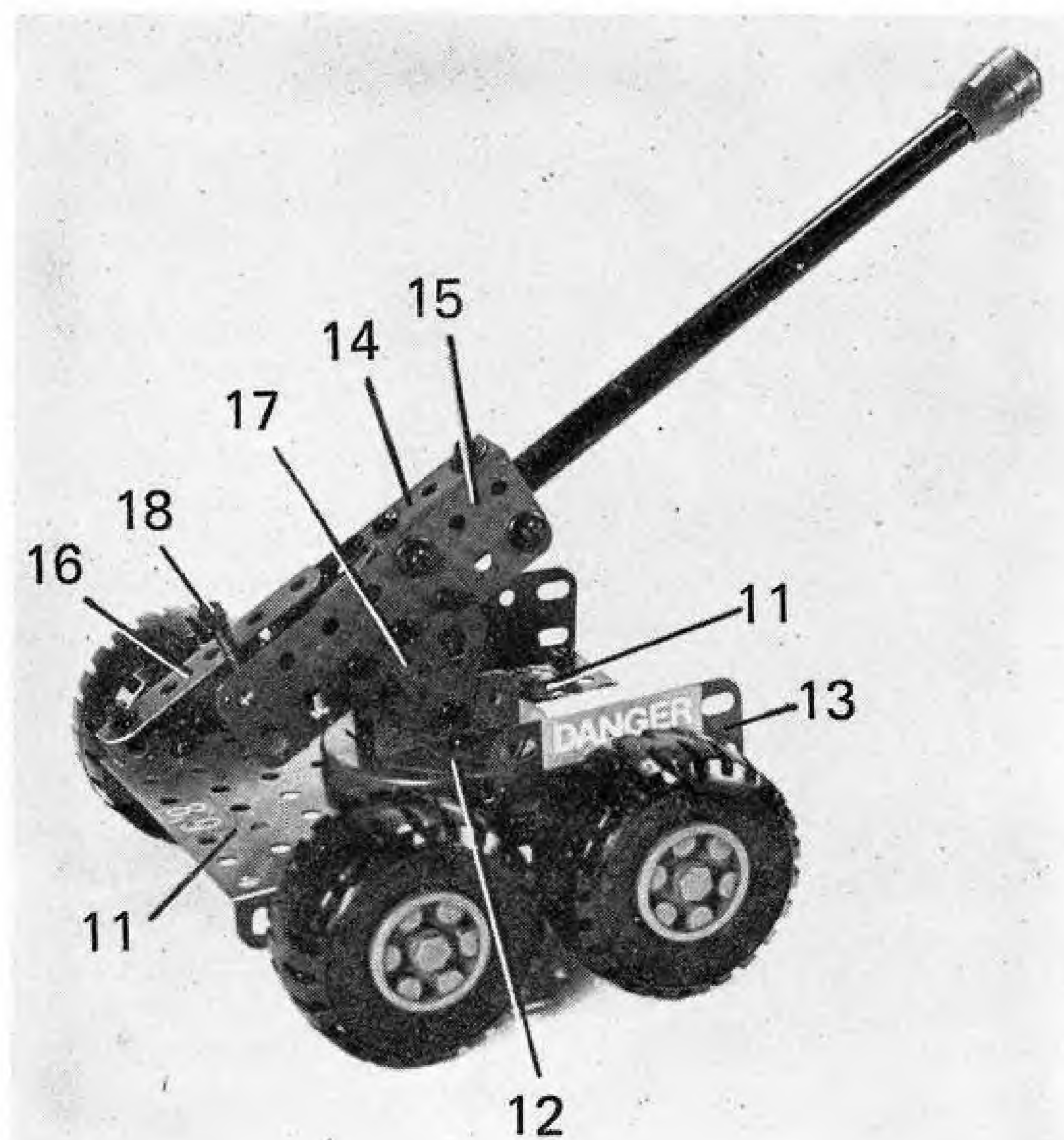
The Gun, proper, is built up from a Channel Bearing 14, to the flanges of which two 3½" Flat Girders 15 are bolted to extend four holes rearwards. The left-hand Flat Girder is itself extended two holes rearwards by a 2½" Angle Girder 16, this being spaced from the Flat Girder by a Washer on each securing bolt. Two Flat Trunnions 17, apexes downwards, are centrally bolted one

A general view of the Anti-Tank Gun. Again, only a comparatively few parts are used, yet Mark has succeeded in capturing an air of substance and realism. The gun, itself, is fitted with a spring-loaded firing mechanism which allows it to shoot matchsticks, short rods, or other suitable "shells" – and gives the builder a lot of fun!

to each Flat Girder as shown. A Gun Barrel, fitted with a Muzzle Brake, is then wedged between the Flat Girders and the flanges of the Channel Bearing, being held in place by the shanks of appropriate Bolts screwed into the Girders and Brackets to press against the Barrel. A 2½" Rod carried in the inner end of the Barrel is fitted with a Collar, in one threaded bore of which a 1-1/8" Bolt 18 is screwed. One end of a Tension Spring is looped over this Bolt, the other end being held on an ordinary Bolt fixed in the rear hole in the top of Channel Bearing 14. This whole assembly, of course, provides the cocking mechanism and spring-loaded firing pin.

To permit variable elevation, the completed Gun is pivotally attached to its mobile mounting by a lock-nutted ¾" Bolt passed through the apex holes of Flat Trunnions 17 and the centre base holes of Trunnions 12. The Gun should pivot on the Bolt, but the friction should be sufficient to hold the Gun at the chosen elevation. Finally, appropriate stickers are added to both the Gun and the Transporter in the positions indicated – and the model is finished. The only additional point which should be mentioned is that, when the Gun is positioned on the Transporter, the loading ramp is of course hinged upwards and Obtuse Angle Bracket 10 is located on the head of a Bolt fixed in the rear hole of Angle Girder 16 of the Gun to hold the ramp in place.

Our last word on the model goes in the form of congratulations to Mark Dawes for a first class effort!



COLLECTORS' CORNER

B.N. Love look a 62 years of Meccano

CLOCKWORK MOTORS

NO MATTER how spectacular a model may be in terms of size and complexity, the attention of the onlooker is always captivated by the degree of motion or 'life' which is in evidence. Frank Hornby knew this when he registered his Patent No. 587, lodged in January 1901, for his design specification showed drawings of a railway truck fitted with a hand crane running on a set of rails with working points. Crude though these Mechanics Made Easy parts were, the essential working model was established and, when the larger of the early sets were produced, a construction manual was provided showing a whole series of working models.

Strangely enough, the quite sophisticated idea of gears, including worm drives and angled gears, was introduced in the first decade before a Meccano Motor of any kind came on to the scene. Clockwork novelties were widespread, but it was 1912 before two quite excellent

Meccano Clockwork Motors were announced in a 3d manual of that year. Titled "THE MECCANO MOTOR" and printed in English, French and German on each of its 16 pages, plus cover, it featured both the No. 1 and the No. 2 Meccano Motors.

No. 1 is illustrated in Fig. 4 and is easily identified by its square-cornered plates, long winding key and a fixed driving spindle. At the same time, the No. 2 Motor, shown in Figs. 2 and 3 in this article, was fully illustrated on page 11 of the 1912 MOTOR MANUAL. It is a magnificent piece of clockwork having no less than three driving spindles, one with a built-in clutching unit.

While the No. 1 Motor remained basically unchanged, the No. 2, or "Trinity" (3 spindle) as it is affectionately known, went out of production during the First World War. Illustrations of the Trinity in the 1912 Manual clearly show the motor marked "No. 2 Motor, Meccano Ltd". Liverpool, England, but the specimen shown here in Fig. 2 is also stamped "Made in Wurtemberg" so the conjecture is that this superb motor was an example of the fine German clockmaking craft exported to Liverpool until hostilities in 1914 stemmed the supply.

Fig. 3 shows the rugged internal gearing and main-spring of the Trinity and this motor featured in several cranes and fairground models of the 1912 MOTOR MANUAL. Its elongated slots were deliberate to permit unorthodox spacing of fastening brackets. Having a fixed main spindle, numbered 3, the Trinity motor had its other two shafts, 1 & 2, removable and these were fitted with 20t Pinions of the period and could be engaged or disengaged by throwing the lever which swung a large gear between them. The No. 1 Motor of the same period carries the Liverpool markings, but is also stamped "GERMANY" so both motors appeared to come from the same stable in those days.

Having a fixed spindle was a drawback for the original No. 1 Clockwork Motor, but, when Liverpool got back into production in 1918, a modified design appeared as illustrated in the centre of Fig. 4. Corners on the motor plates were rounded and a special Pinion was cut with an integral boss and set screw so that any size of standard Meccano Axle Rod could be fitted. By 1926,

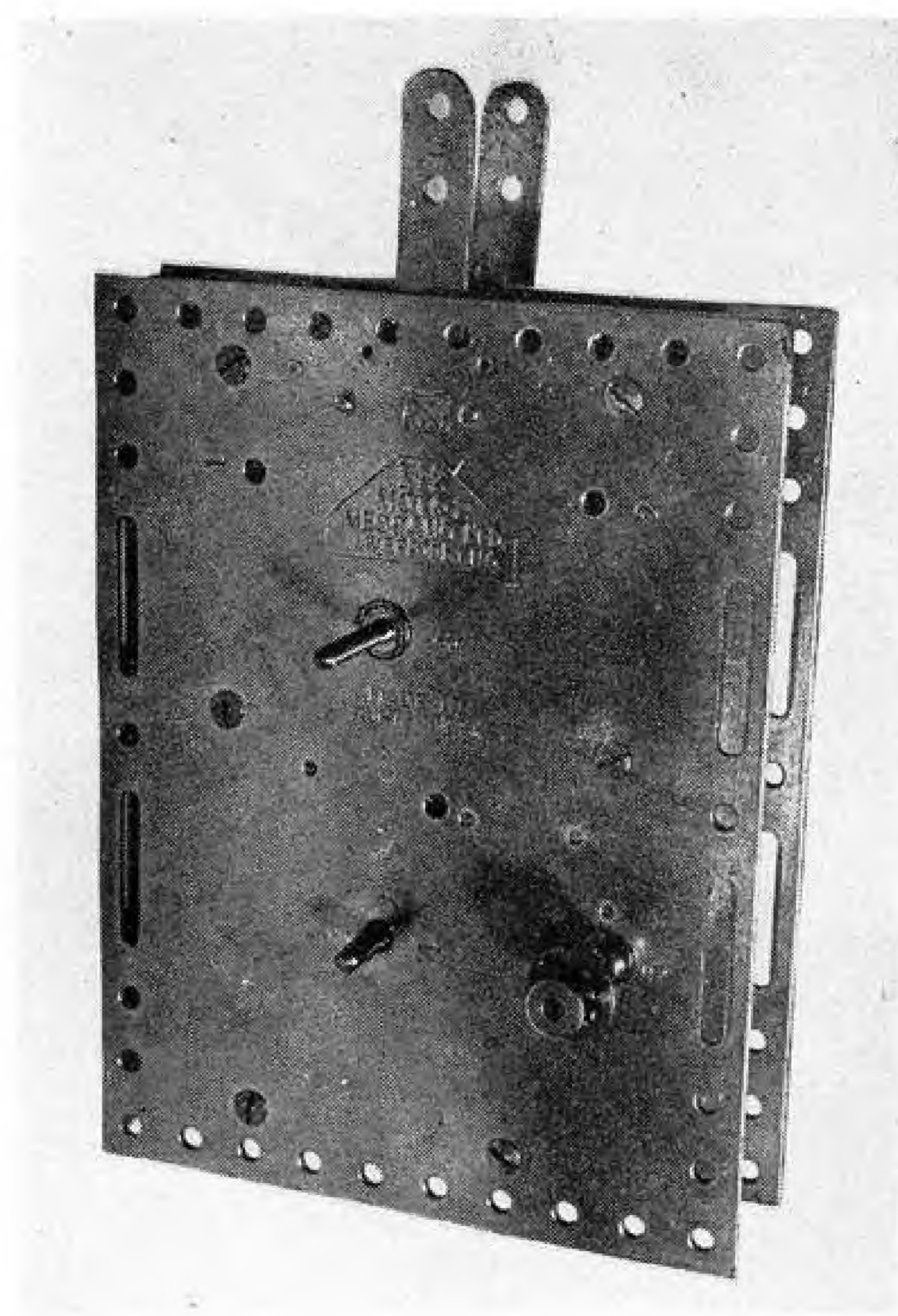
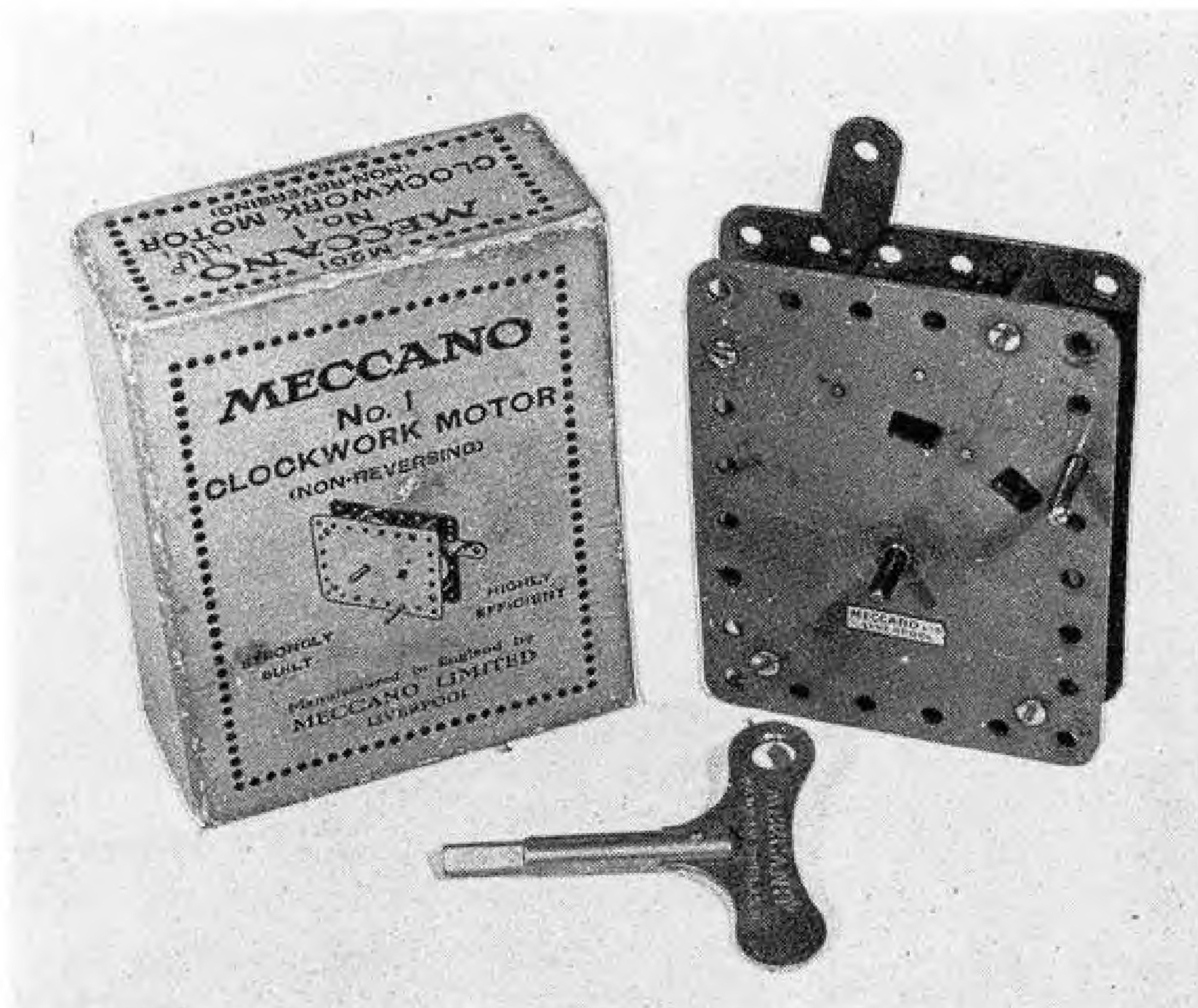


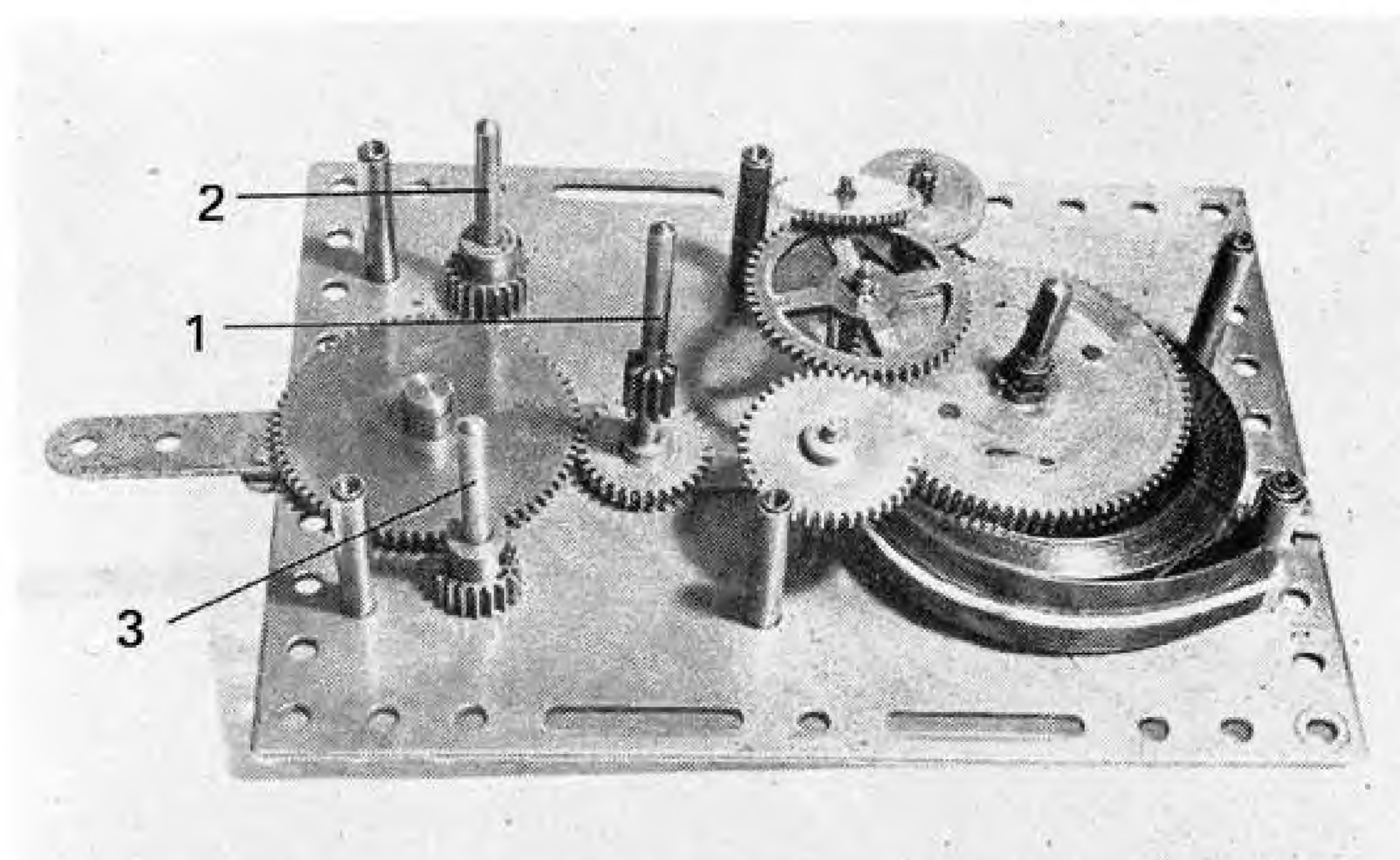
Fig. 1, above: the popular non-reversing No. 1 Clockwork Motor of the 1930's period, complete with box, dated November 1936. Fig. 2, left: the original No. 2 Clockwork Motor as manufactured for Meccano in Germany before World War One. It had three separate driving spindles and a built-in clutch mechanism.

some additional modifications were made, reducing the Plate separation pillars from five to four and setting in the rear pillars from the edge of the motor plate permitting all seven holes along the shorter edge to be used for attachments.

The No. 1 Meccano Clockwork Motor stayed in this form until the introduction of red and green Meccano with its rapid development at the end of the 1920's. At that time two other Clockwork Motors arrived on the scene, one of them being more powerful than the No. 1 and called the No. 2, and the other a less powerful, non-reversing motor. It was decided to call this latest addition the Number 1 Meccano Clockwork Motor, so the old No. 1 was upgraded to No. 1a and given a bright red enamel coat.

The new No. 2 Motor out-performed the 1a for power and length of run, the side plates retaining the overall dimensions and position of brake and reversing levers, but the plates were spaced slightly further apart to accommodate the heavier and longer spring. A larger mainspring drive cog was also fitted and collectors in doubt may compare the Motors 1a and No. 2 by inspecting the mainspring gear. That of the 1a will accommodate a standard 38t Meccano Gear Wheel when journaled in the top row of holes on the motor plate. The No. 2 Motor requires a 19t Pinion for similar journaled. In either case, the take-off power from such an arrangement is extremely strong (though somewhat short term) and is, of course, non-reversible.

Being relatively cheap — some four or five shillings in the early 30's, — the new No. 1 non-reversing Meccano Clockwork Motor was very popular and is seen here illustrated with its neat box in Fig. 1. Its winding arrangements were both novel and somewhat inconvenient. Meccano enthusiasts are familiar with part No. 176, Cord Anchoring Spring, and its principle of gripping a Rod very tightly when rotated in the direction which causes the spring to close its coils. Such a device was used for the No. 1 Motor, but it was necessary to provide a dished bulge in the side of the motor plate to accommodate the short spring required. This made it impossible to place the motor on a flat surface from the bulge side, unless stand-off supports were provided. However, this anchoring method ensured that the No. 1 Motor was a



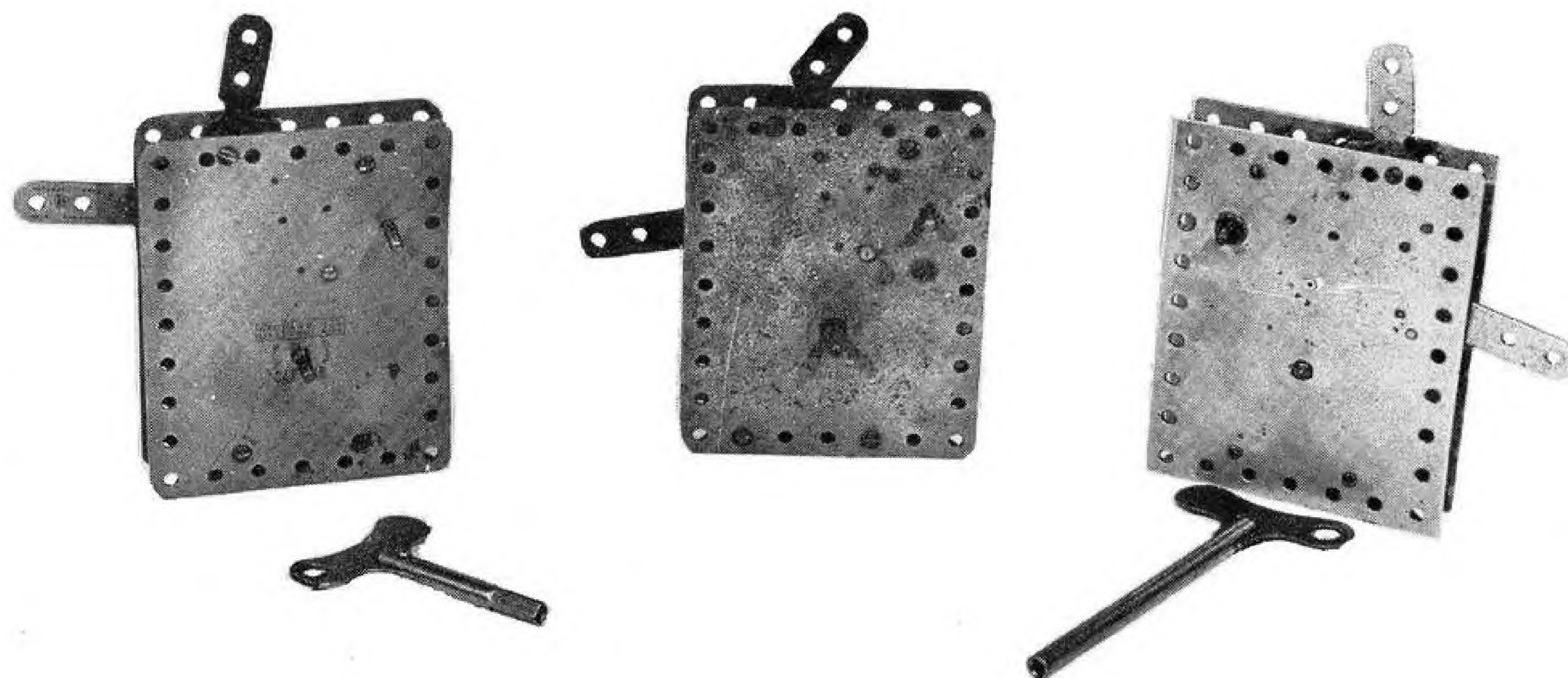
Rugged interior of the No. 2, or "trinity" motor showing the three separate spindles and the change-over lever.

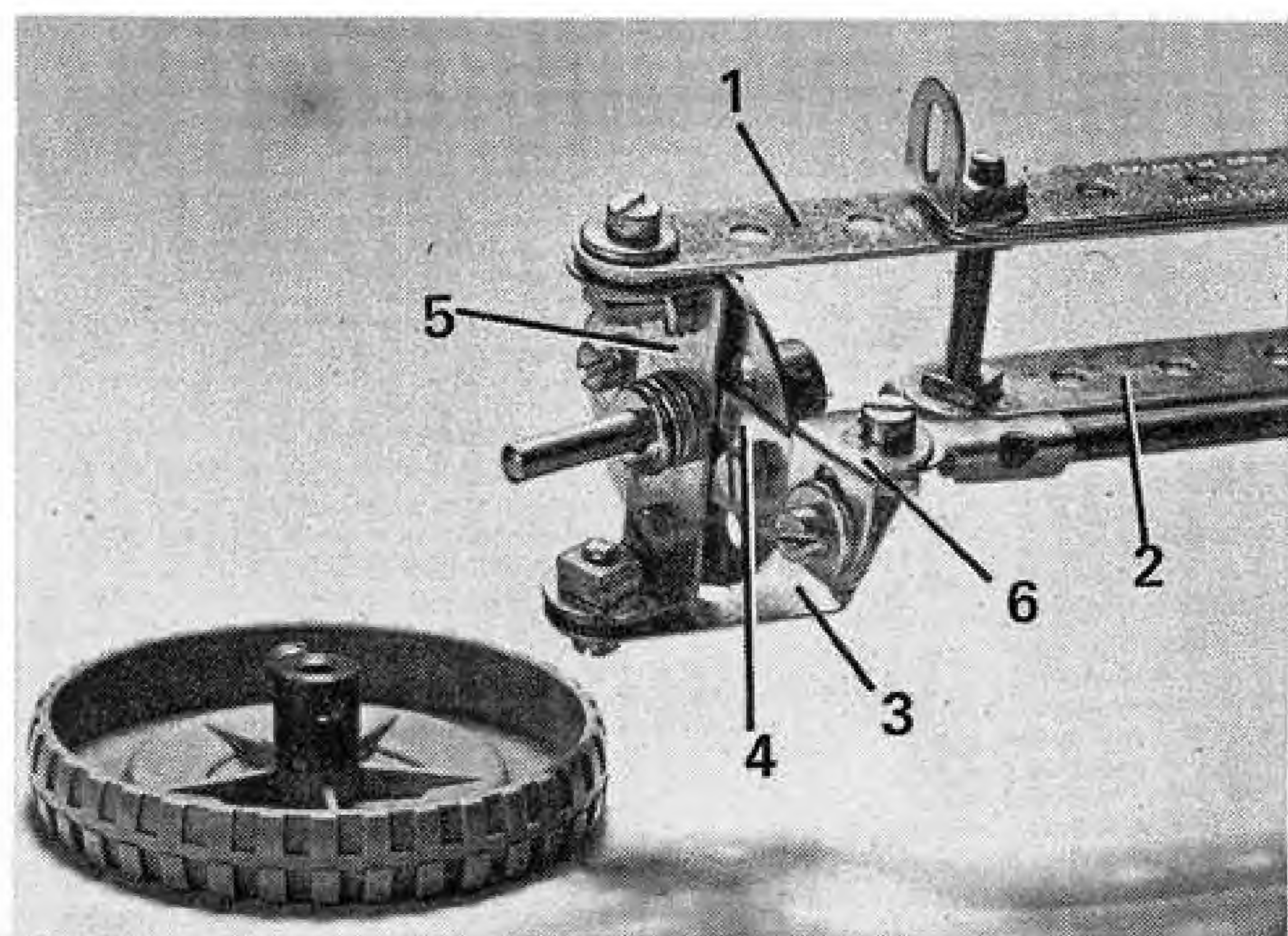
'silent wind' type, since there was no ratchet to click in the winding process. For this reason they were — and are, when discovered in junk boxes — favoured by the clock-building fraternity because of the silent wind feature.

A major departure in Meccano Clockwork Motors was the introduction of the 'X' Series Motor which differs only slightly from the Magic Motor of to-day. This was designed for the 'X' Outfit models of the early 30's and had a fixed key and cast metal driving pulley permanently attached to its driving spindle. It was quite effective for its purpose and even advanced model builders of today can make the current Meccano Magic Motor perform in a very workmanlike way on a variety of light, powered models.

We have to-day with us the 'hybrid' Meccano Clockwork Motor which retains the side plate dimensions of the 1930's No. 1 Motor, but is fitted with a reversing motion. Even here, there are some anomalies. When Binns Road return to the manufacture of Meccano goods after the Second World War, the old No. 2 Motor reappeared for a short period in a coat of black crackle paint, but was phased out by 1950. Its place was taken by the new, small reversing motor, but this retained the silent wind feature already described. Only a small number of these were made and the present day design, with flush side plates, has lasted for over 20 years.

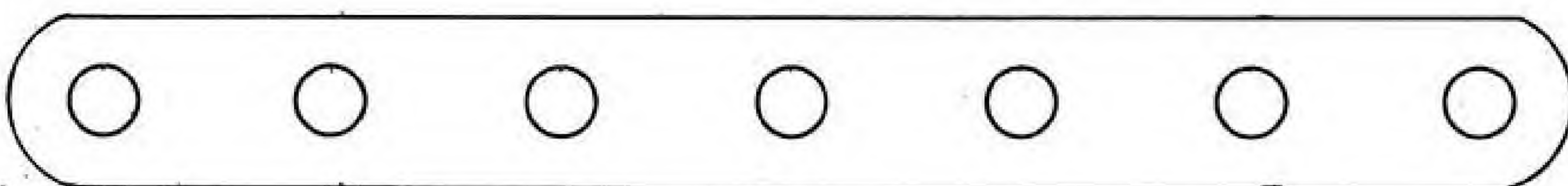
Three veteran No. 1 Clockwork Motors from different periods. Right, original 1912 unit with fixed spindle; centre, 1918 version with rounded corners and removable spindle; left, 1926 version with modified plate pillars.





AMONG THE MODEL-BUILDERS

with "Spanner"



IT IS A FACT that Meccano modelling is currently enjoying enormous popularity.

This is partly indicated by the growing number of Meccano Clubs around the world — and by the growing number of members in those Clubs — but, although you may not know it, a further indication (indeed, concrete proof!) is provided by the fact that the world-wide demand for Meccano this year has been so high that our production has been unable to meet it.

There are, no doubt, many intellectual reasons for the upsurge in Meccano interest ('escaping from the rat race', 'fed up with television', and so on) but I firmly believe that a large part of the credit is due to you, the modellers, yourselves. A marvellous spirit of enthusiasm is running through the international Meccano 'fraternity' and, what with the exhibitions and displays being held by clubs and individuals, this spirit is infecting more and more members of the public. It promises great things for the Meccano hobby.

But, to get down to model-building matters, our first offering this issue is an effective front axle design submitted by Mr. Bernard Dunkley of

Mill Hill, London. The axle beam itself is built up from a 5½" Strip 1, centrally overlayed by two 2½" Strips and connected by two 1-1/8" Bolts to another pair of 2½" Strips 2, which are extended at each end by a further 2½" Strip 3, suitably bent to shape. The Strips are held tightly on the Bolts by Nuts and, when built into a model, the upper section of the beam would be fixed directly to the chassis of the model by the same Bolts.

Each swivel hub is supplied by an 8-hole Bush Wheel, boss inwards, across the face of which a 2" Strip 4 and a 1½" x ½" Double Angle Strip 5 are bolted at right-angles to each other. The Double Angle Strip, being on the outside, is spaced from the Bush Wheel by a Washer on the shank of each securing Bolt. The hub is positioned between the arms of the axle beam and lock-nutted through the end holes of Strips 1 and 3 with a Washer being carried between each lug and its nearby Strip to make for easier movement. Note, however, that the hub is positioned in the beam with the projecting end of Strip 4 pointing rearwards. An Angle Bracket 6 is bolted to this end of the Strip and, lock-nutted in turn to the other lug

of the Angle Bracket, is a Rod and Strip Connector which is fixed on the end of the track rod.

The unit is designed for use with standard Meccano Road Wheels (No. 187). Each wheel is fixed on a 1½" Rod which revolves freely in the boss of the Bush Wheel, being held in place by a Collar on the inside end of the Rod. It is necessary to space the boss of the Road Wheel away from Double Angle Strip 5 with three Washers to prevent the Road Wheel from catching on the ends of the axle beam. The following parts list, by the way, applies purely to the demonstration half-unit illustrated in the accompanying photograph.

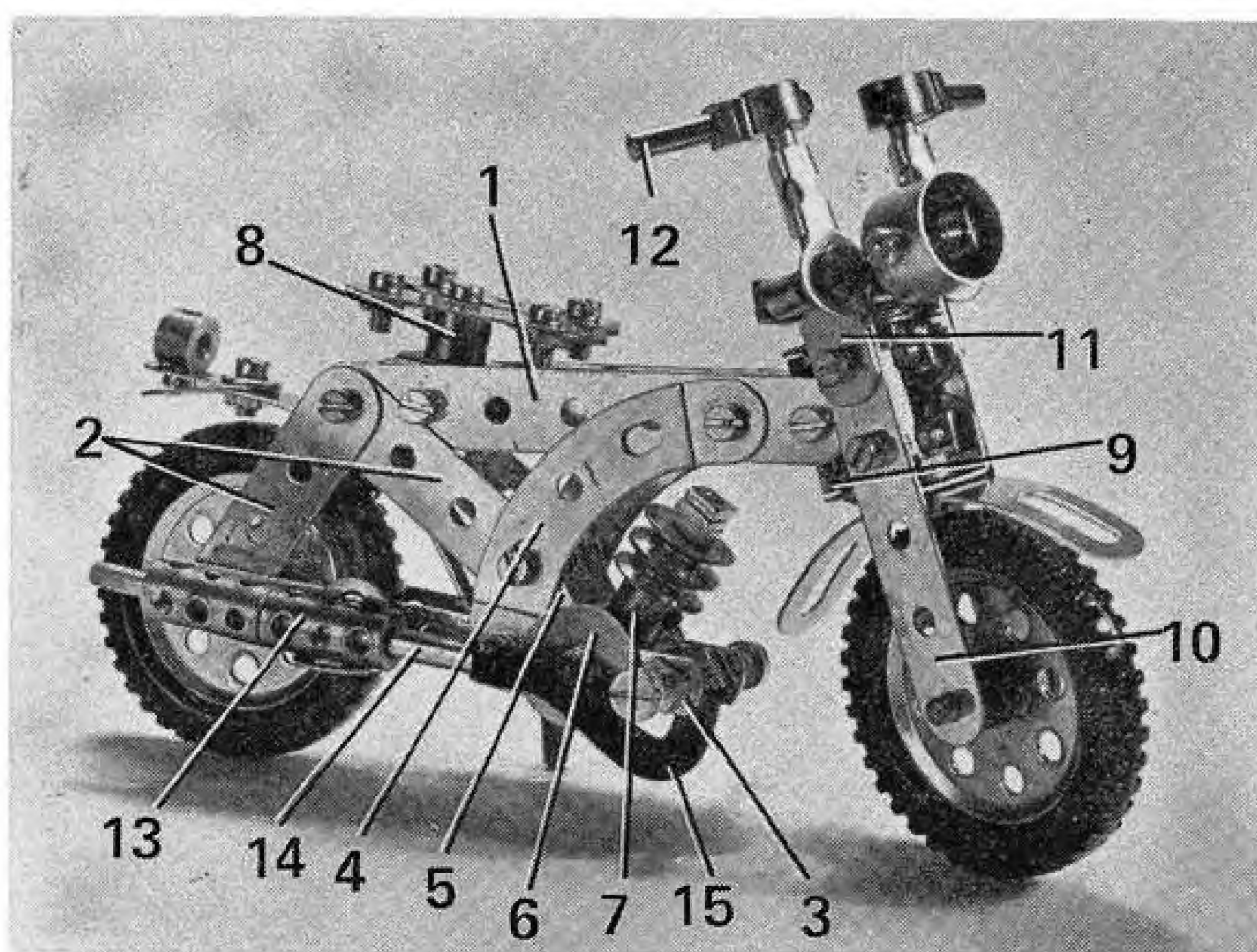
PARTS REQUIRED

1- 2	1-16	6-37b	2-111c
6- 5	1-18a	10-38	2-111d
1- 6	1-24	1-48	1-187
3-12	17-37a	1-59	

MIDI BIKE

In the very first issue of the MMQ (Volume 58 No. 1) we featured a simplicity model Mini Bike designed by Mr. Desmond White of East Bendigo, Victoria, Australia. Still in the simplicity world, Mr. White has now increased in size, so to speak, and has come up with the highly appealing Midi Bike illustrated here. Although only 7" long, the Bike is marvellously realistic and it took my fancy the moment I saw the photograph.

Construction is not difficult. The main frame has two similar sides, each supplied by a 3½" Strip 1, two 2" Strips 2, a 3½" Narrow Strip 3, a 2½" Stepped Curved Strip 4 and a 1" Corner Bracket 5, all arranged as shown. Note that the Bolt fixing the forward corner of the Corner Bracket to the Narrow Strip also holds a ¾" Washer 6 in place and,

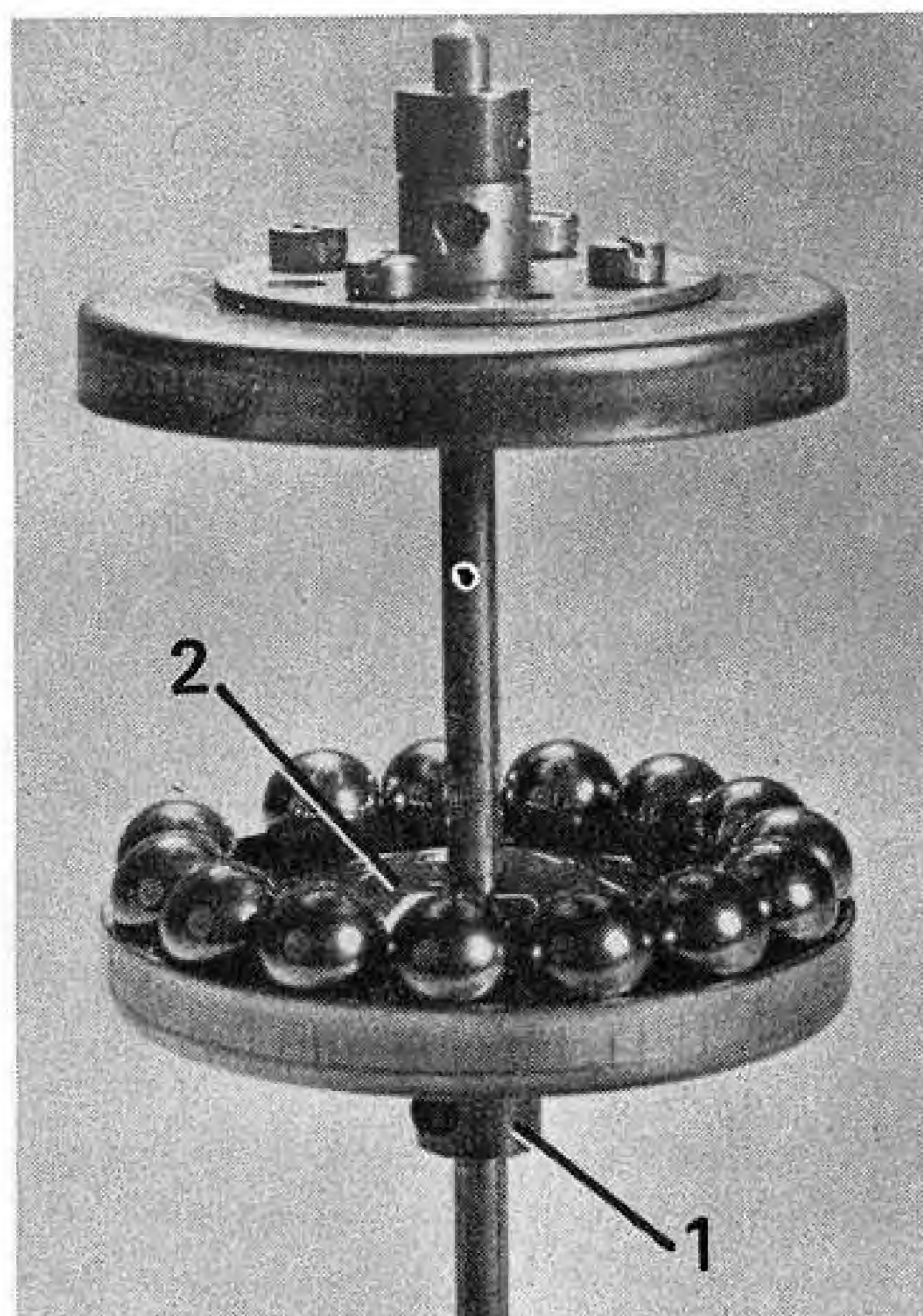


Our heading photograph above shows a realistic steerable Front Axle Unit designed by Mr. Bernard Dunkley of Mill Hill, London. Left, a very appealing 'Midi Bike', rebuilt from an original design by Mr. Desmond White of East Bendigo, Victoria, Australia. A true 'Simplicity' model, using only few parts, yet capturing all the atmosphere of its subject.

at the same time, helps to fix a Large Fork Piece 7 between each side of the frame. The sides of the frame are further connected together at their upper rear corners by a Double Bracket, lugs slanting upwards, and a second Large Fork Piece 8 secured through the second holes from the rear of Strips 1. Attached to the boss of this Fork Piece by a $\frac{1}{2}$ " Bolt is the saddle, provided by two $1\frac{1}{2}$ " Strips connected at the rear by a 1" Corner Bracket and, at the front, by a Fishplate. The rear mudguard is a Formed Slotted Strip bolted to the base of the nearby Double Bracket, with the rear light being supplied by a Collar fixed to a Fishplate which is in turn bolted to the mudguard.

Held in the boss of Fork Piece 7 is a Long Threaded Pin, on which two brass $\frac{1}{2}$ " Pulleys are mounted to represent the engine cylinder head. Washers 6, of course, represent the crank case. Immediately forward of the Washers are the footrests, provided by Pivot Bolts held in the forward end holes of Narrow Strips 3.

The pivot for the front fork assembly is provided by a Coupling 9 fixed between the forward ends of Strips 1, spacing Washers being carried on the fixing Bolts as necessary. A 1" Rod is fixed in the longitudinal bore of the Coupling, the protruding ends of this Rod locating in the round holes of Fishplates bolted to the front fork assembly. The assembly, itself, is built up from two $2\frac{1}{2}$ " Strips 10, connected together by two Double Brackets (to which the just-mentioned Fishplates are bolted), the upper securing Bolts of which hold two right-angled Rod and Strip Connectors 11 in place, as shown. Attached to these by Pivot Bolts are two ordinary Rod and Strip Connectors, each carrying a 1" Rod, on the upper end of which a Collar is fixed. Screwed into one transverse bore of this Collar is a Threaded Pin 12, serving as the handle bar. The



A compact Ball Thrust Bearing.

headlamp is a Chimney Adaptor bolted to an Angle Bracket which is in turn bolted to the top of one of the front fork Double Brackets. A Formed Slotted Strip is bolted to the lower Double Bracket to serve as the front mudguard, then the wheels are simply provided by $1\frac{1}{2}$ " Pulleys with Motor Tyres carried on 1" Rods journaled in the forks. Each Rod carried a Collar to hold the Pulley in a central position.

Finally, the exhaust pipe is built up from a Coupling 13, attached by an Angle Bracket to right-hand Narrow Strip 3, the Angle Bracket being spaced from the Strip by two Washers. Held in the Coupling are two $1\frac{1}{2}$ " Rods, projecting forwards and backwards. A second Coupling is carried on the rear Rod, while a Rod Connector 14 is fitted on the forward Rod. Located over the front of this Rod Connector is a Tension Spring 15 which is curved round, as shown, and secured to left-hand Narrow Strip 3 by the Pivot Bolt serving as the footrest.

Superb examples of the ever-popular Traction Engine in Meccano. The two masterpieces below are the work of Mr. Brian Rowe of Newton Abbott, Devon. The credit for the beautiful 'My Lady' (right) goes to Mr. Ernest Chandler of Stratford-upon-Avon. More details on page 105.

PARTS REQUIRED

2- 3	6-18b	1- 43	3-133a
2- 5	2-21	5- 59	2-142d
4- 6	2-23b	3- 63	4-147b
2- 6d	32-37a	2- 90a	1-164
4-10	30-37b	1-111a	2-212
3-11	12-38	2-115	1-212a
2-12	2-38d	1-115a	1-213
2-18a			2-215

BALL THRUST BEARING

Our final constructional item this issue is a compact, but effective, Ball Thrust Bearing jointly submitted by Mr. Bert Halliday of London and Mr. Alan Partridge of Sutton Coldfield, Warwickshire. As Alan points out, however, the lion's share of the credit for the mechanism is due to Bert who developed the original design.

As can be seen from the accompanying photograph, the make-up of the bearing is really very simple. A 2" Pulley is bolted to the inside of a Wheel Flange, the boss (1) of the Pulley projecting through the centre hole in the Flange. Located over the face of the Pulley is a Conical Disc 2 and, running round the edges of this, are 14 Steel Balls, Part No. 168d. Another Wheel Flange is simply located over the Balls to encase the unit, an 8-hole Bush Wheel being bolted to this Flange to provide an upper bearing for a supporting Rod.

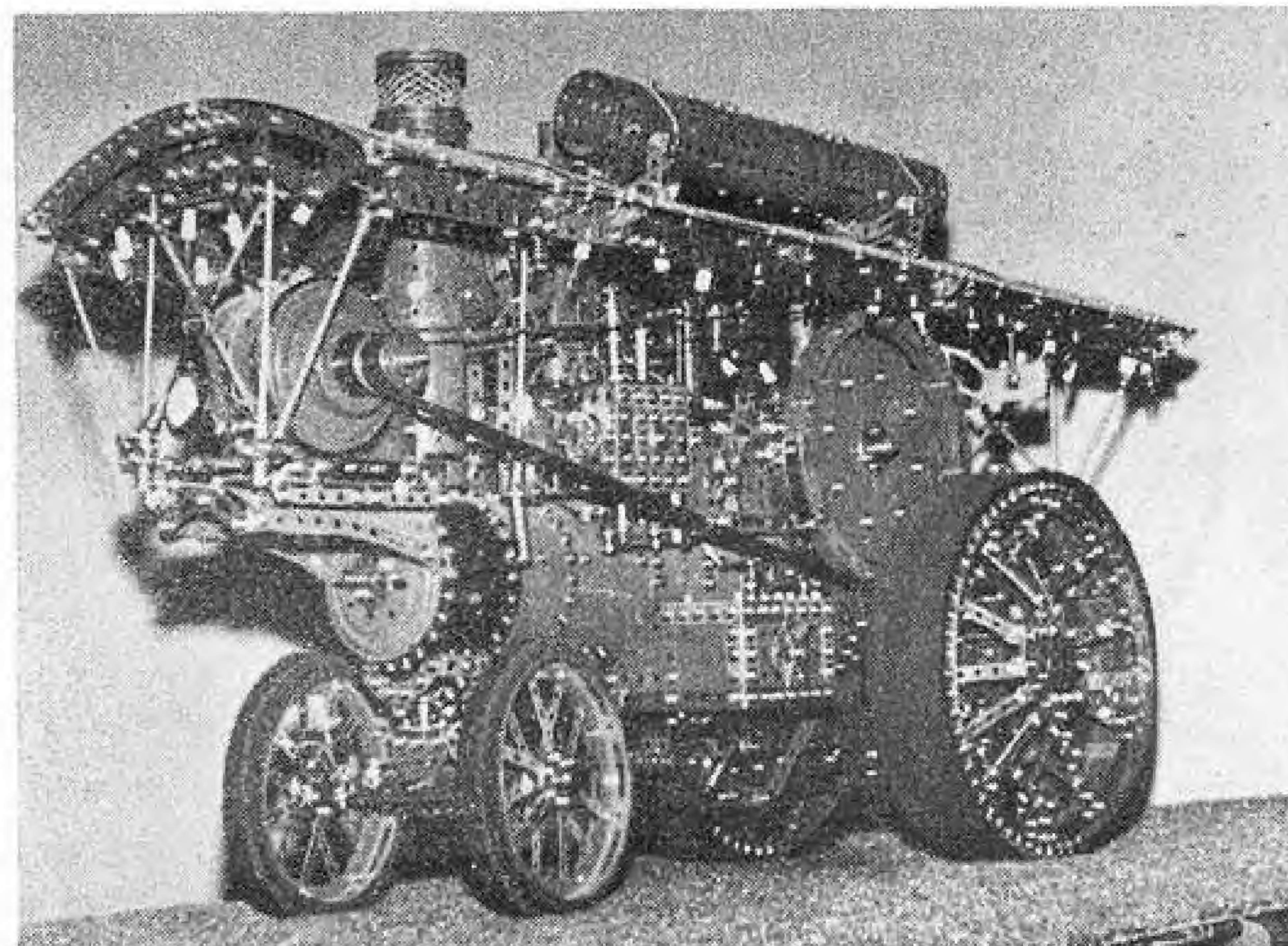
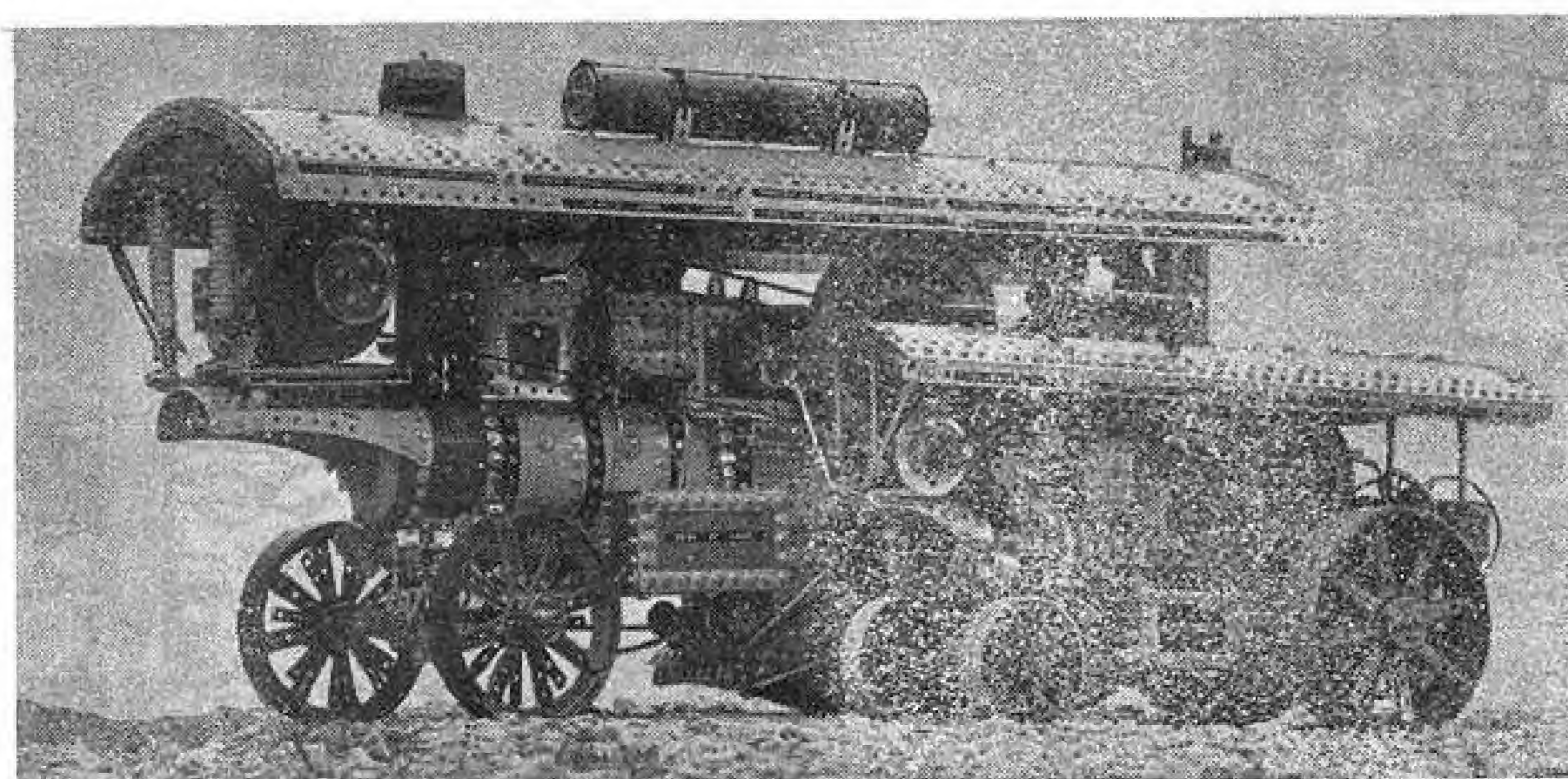
PARTS REQUIRED

1-20a	8-37b	2- 59	14-168d
1-24	4-38	2-137	1-187a
8-37a			

A PAIR OF BEAUTIES!

Last, but by no means least, I would like to draw attention to the two beautiful Traction Engine Models

continued on page 105





HOW LONG IS A PIECE OF.....?

Brian Williams shows how to calculate the required length of a Driving Band or Chain using simple Mathematics

The following notes writes MMQ reader Brian Williams may be useful to Meccano Engineers when designing and building models which incorporate Pulley or Sprocket drives. The principles are used in actual power transmission engineering, but are equally applicable to Meccano.

The normal procedure in Meccano is to incorporate the shafts and Pulleys in to the model during construction and then to find a suitable Driving Band to fit, or in the case of chain drive, to offer up a length of Chain, mark, and open a link to detach the necessary length.

It may be more convenient to be able to calculate the length of Driving Band required for a particular Pulley drive, or the length of Chain for a Sprocket drive, before the shafts and Pulleys or Sprockets are built in to the model. A simple formula enables the length of belt to be determined, if some basic dimensions are known. This is:

$$L = 2C + (D + d \times 1.57)$$

L is the belt length, C the distance between the Pulley/Sprocket shaft centres and D & d the diameters of the large and small Pulleys. (See fig. 1).

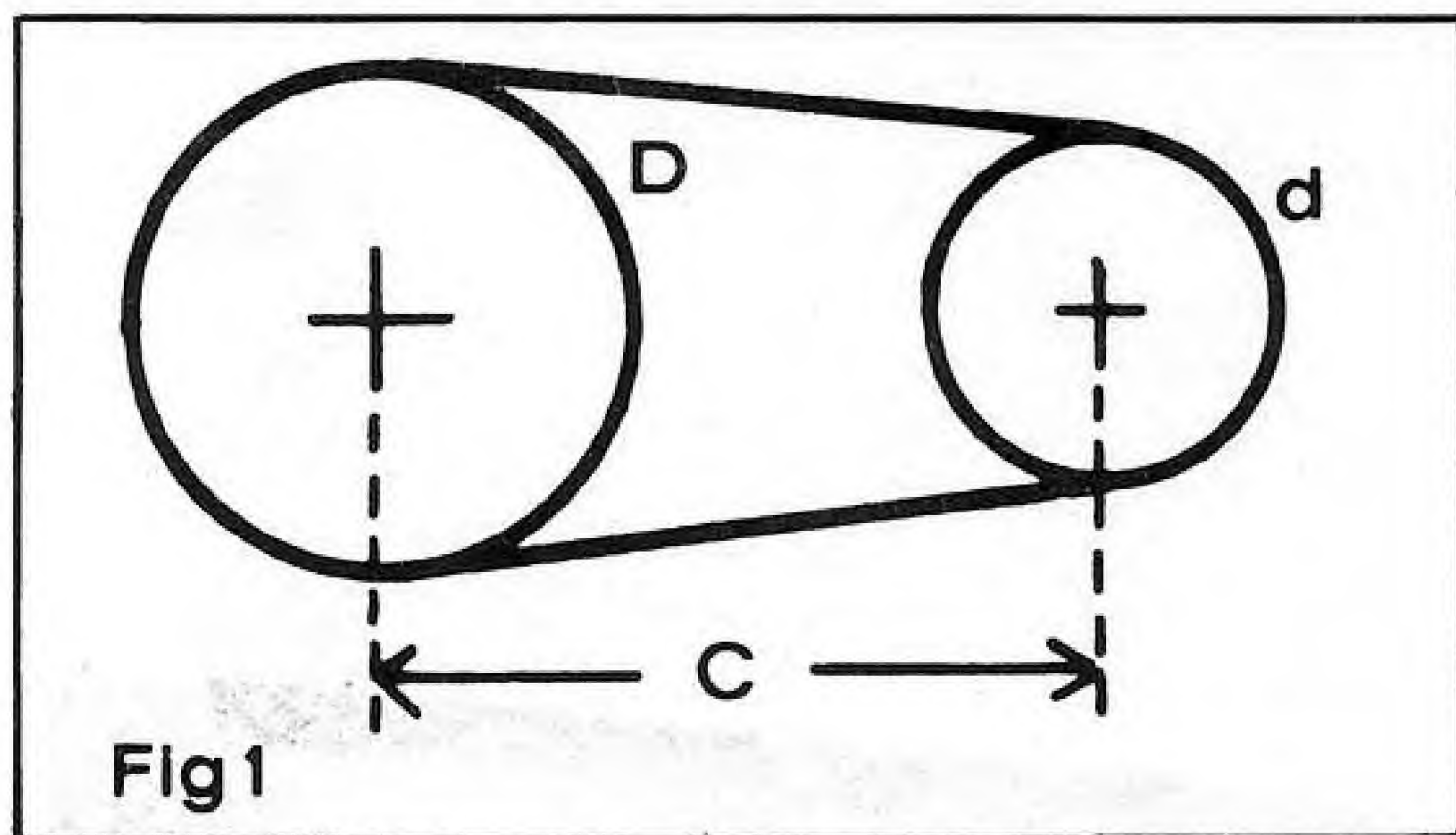
Example:- a 1" Pulley driving a 3" Pulley at shaft centres of 3":-

$$\begin{aligned} L &= 2'' \times 2'' + (1'' \times 3'' \times 1.57) \\ &= 6'' + 4.71 \\ &= 10.71'' \end{aligned}$$

The belt length required is therefore 10.7 inches and a 10" Driving Band would be suitable.

Of course Meccano Driving Bands offer considerable latitude in length, and consequently shaft centres may be

Diagram of a typical pulley-and-belt drive arrangement showing the basic dimensions which are used to calculate the length of the belt required.



adjusted to a considerable degree, although Driving Bands should not be excessively tight on the Pulleys.

The same formula as above is applicable to chain drives, using the Sprocket diameter, **Example:-** a $\frac{3}{4}$ " and a 2" Sprocket at $2\frac{1}{2}$ " centres would require a Chain length of approx. 9.3 inches. One might need to add or subtract a link to obtain a snug-fitting chain, but the simple calculation involved above enables the modeller to select a suitable length of chain from several odd lengths.

"Arc of Contact Factor"

Unfortunately, complications sometimes arise! In the case of a drive using a small Pulley and a comparatively

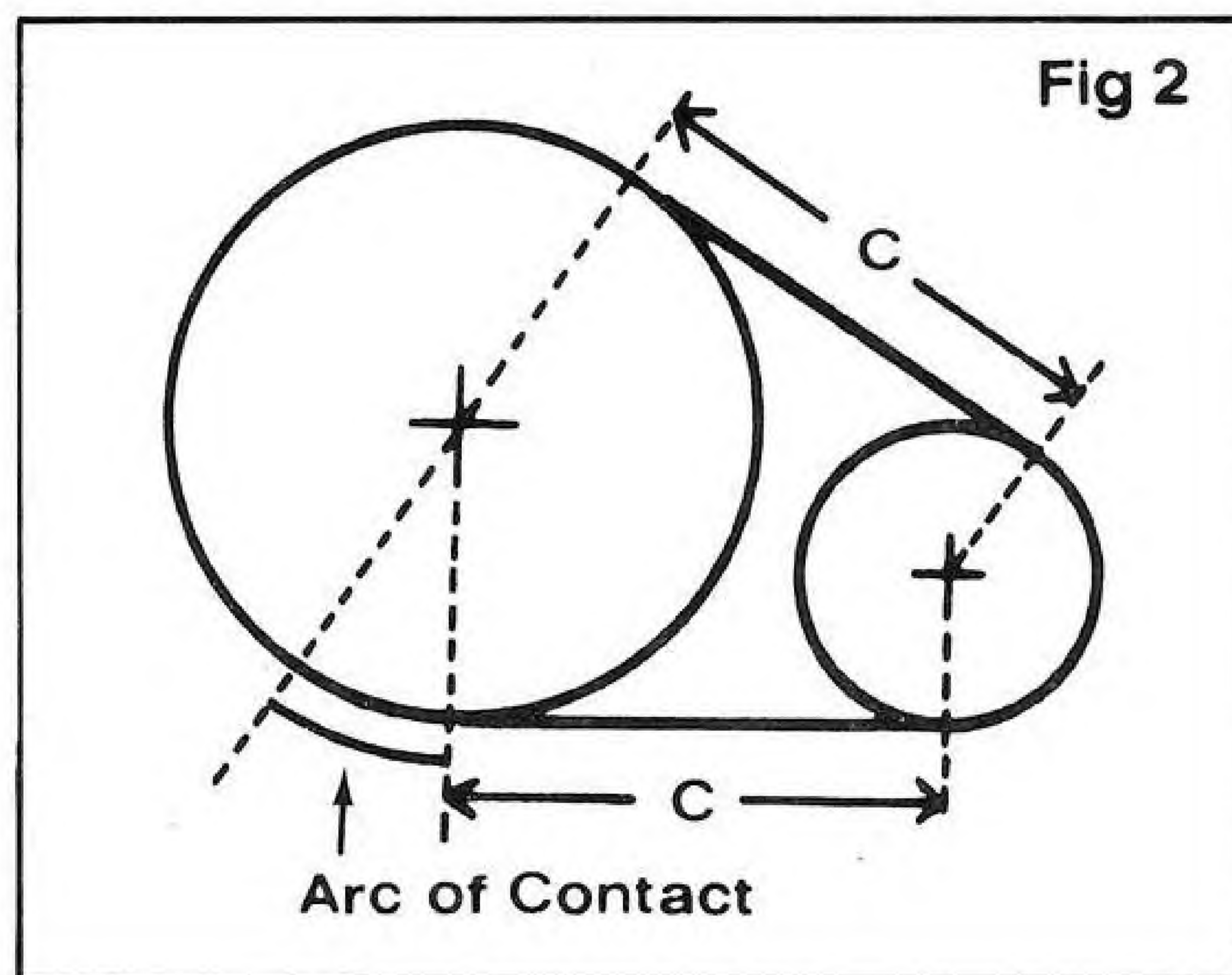


Diagram showing the 'Arc of Contact' – a factor which can arise to complicate driving belt-length calculation when a small and particularly large Pulley are used together. As can be seen, the belt makes contact with noticeably more than half the circumference of the larger Pulley.

large one, e.g. 1" and 6", a peculiarity known as the 'Arc of Contact' factor emerges – see fig. 2. However, this complication should not normally affect calculations for Meccano Pulley drives, as the additional length of Driving Band involved would be provided by the elasticity of Meccano Driving Bands as mentioned above.

Teeth in Mesh – Sprockets

A further point arises with toothed, i.e. sprocket, drives in cases where a small diameter Sprocket is used

in a drive with a large-diameter Sprocket at close shaft centres — in such cases the number of teeth in mesh on the smaller Sprocket may be reduced below an acceptable level.

To take an example, if one used a 73:14 chain drive utilising a $\frac{3}{4}$ " (14 tooth) Sprocket and a 4" diameter Toothed Disc, Part No. 168b, with shafts only $2\frac{1}{2}$ " apart, this set-up would appear as Fig. 3 and, although it is rather an extreme example, it illustrates the fact that only four teeth of the small Sprocket are in mesh with the Chain. From an engineering viewpoint such a drive is not desirable as it would cause problems in running, and excessive wear of the Sprocket teeth and Chain.

There are other engineering principles and formulae applicable to Meccano power drives. For example, to decide upon a suitable centre distance for Pulley or Sprocket shafts, where shafts are not at a pre-determined distance caused by the design of the model, the following formula may be used:

Choose shaft centres approx: $2 \times \sqrt{(D + d) \times d}$ where D and d are the diameter of the large and small Pulleys respectively. (This formula might also be good practice for square roots, if you happen to like that sort of thing!)

Example of above:

2" and 3" dia. Pulleys in a 2:3 ratio drive:

$$\begin{aligned} \text{Centre distance of shafts: } & 2 \times \sqrt{(3 + 2) \times 2} \\ & = 2 \times \sqrt{10} \\ & = 6\frac{1}{2} \text{ inches approximately.} \end{aligned}$$

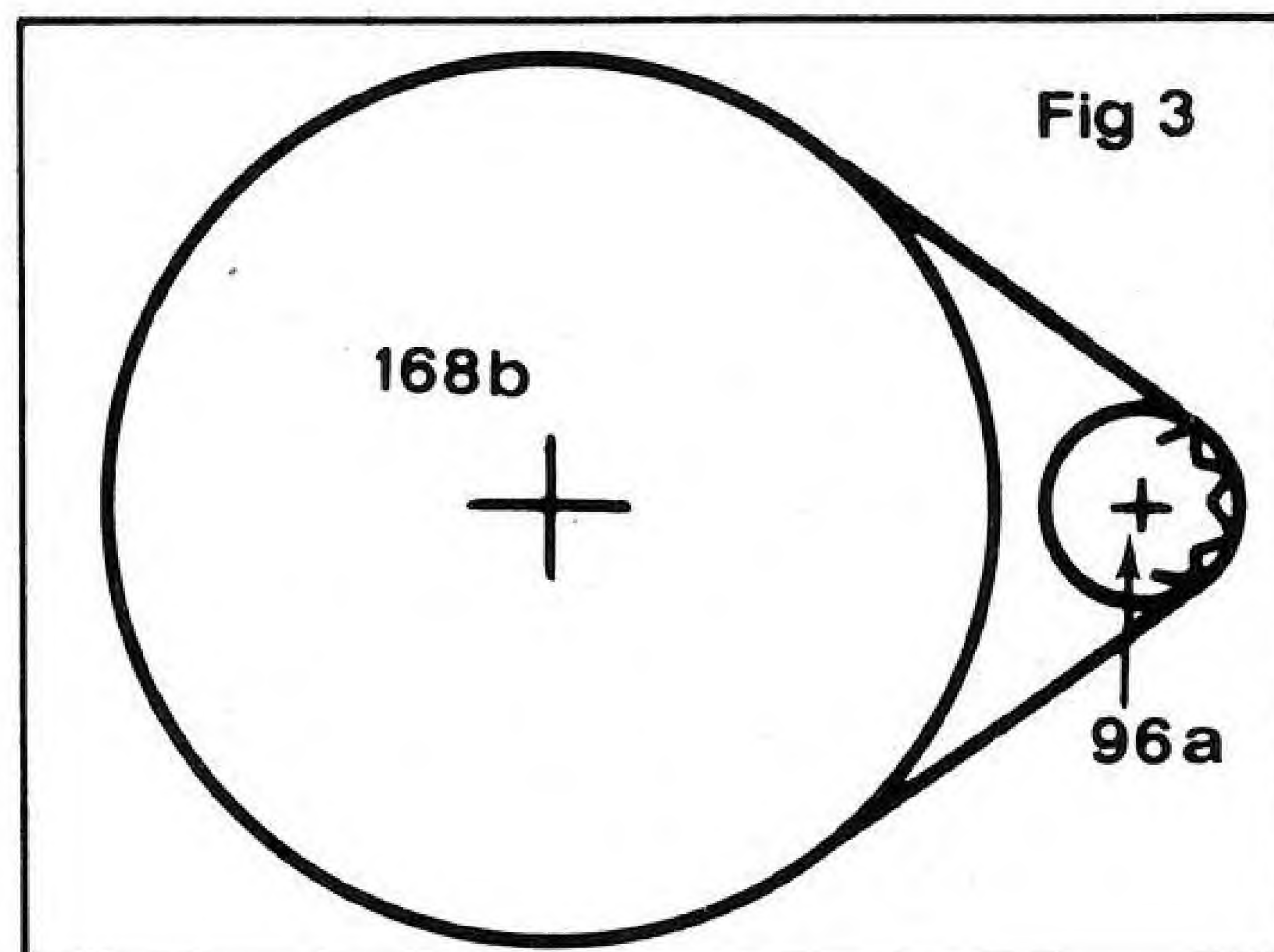


Diagram illustrating the problem inherent in using a very large and small Sprocket together. The driving Chain engages with an undesirably small number of teeth on the smaller Sprocket.

Referring back to the first formula given, the belt length for this drive would be:

$$\begin{aligned} L &= 2 \times 6\frac{1}{2} + (3 + 2 \times 1.57) \\ &= 13 + 7.85 \\ &= 20.85 \text{ inches.} \end{aligned}$$

i.e. a 20" Driving Band, Part No. 186e.

MECCANO^(R) for Christmas!

STANDARD SETS

POCKET SET	0.56
No. 1 SET	1.85
No. 2 SET	2.95
No. 3 SET	4.05
No. 4 SET	5.39
No. 5 SET	8.05
No. 6 SET	10.85
No. 7 SET	13.49
No. 8 SET	16.60
No. 9 SET	35.15
No. 10 SET	150.00

CONVERSION SETS

1x	1.20
2x	1.25
3x	1.75
4x	3.15
5x	3.35
6x	3.20
7x	4.50
8x	12.30



SPECIAL SETS

No. 3M	6.60
No. 4M	9.05
No. 4EL	15.20
No. 5ME	20.35
GEARS SET	3.05
ELECTRONICS CONTROL	6.50
MECHANISMS SET	5.15
SUPER TOOL SET	1.80

CLOCK KITS

No. 1 CLOCK KIT	4.85
No. 2 CLOCK KIT	9.75

MULTIKIT

HIGHWAY MULTIKIT	5.85
ARMY MULTIKIT	6.60
SUPER HIGHWAY	8.60

ANY SET SENT
POST FREE

(V.A. Tax free, but postage extra, to Overseas)

M.W.models

165 Reading Road, HENLEY-ON-THAMES, Oxon, RG9 1DP.

FESTIVAL 74



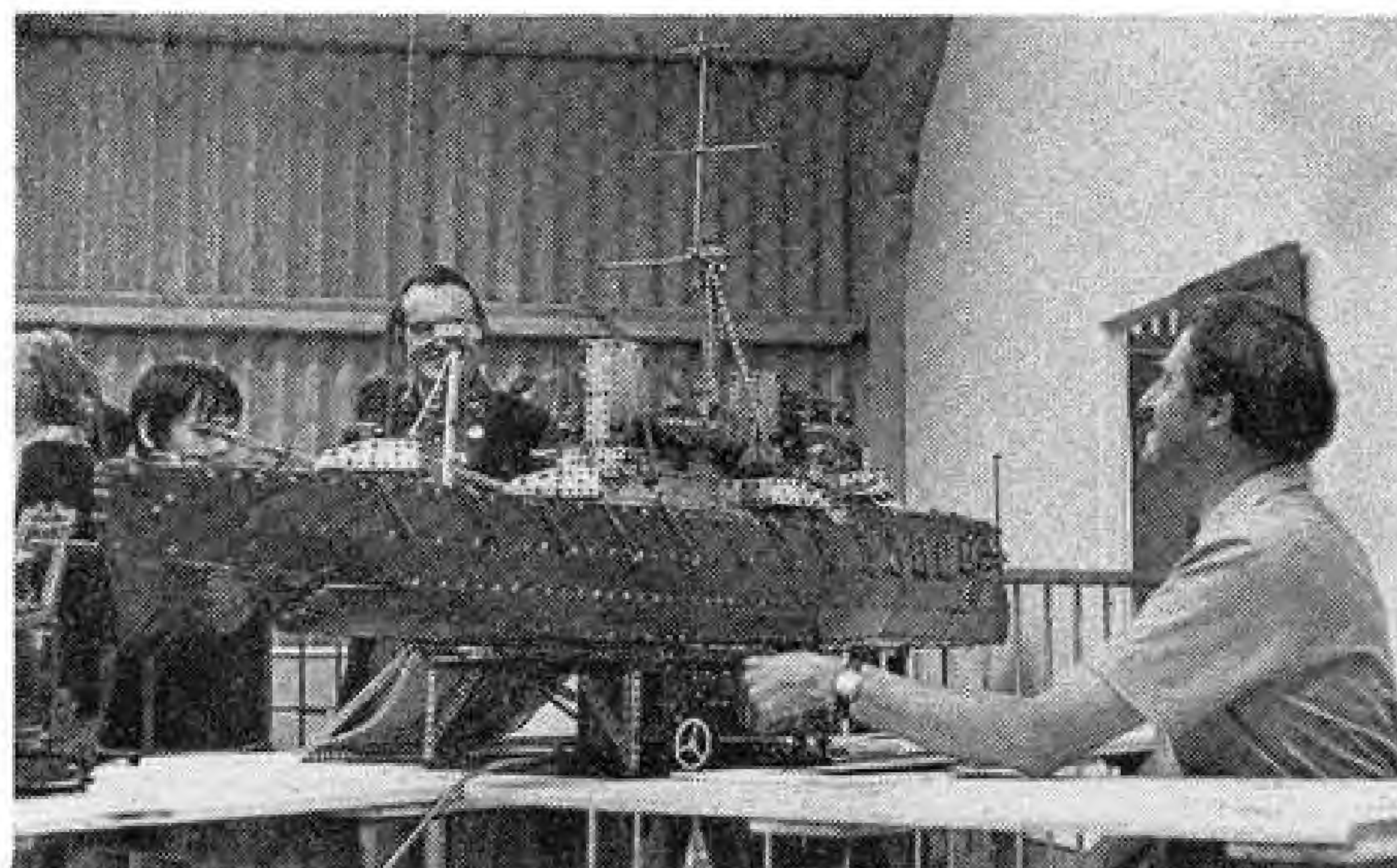
Phil Ashworth reports on the Midlands M.G. display at Stoneleigh.

THERE WAS something for everybody at this year's Stoneleigh Festival, held over the Bank Holiday weekend of 24th - 26th August, ranging from a Steam Fair, traction engines, vintage cars and helicopter flights to model engineering, cookery demonstrations and clay pigeon shooting.

There was also plenty of variety among the models displayed by the Midlands Meccano Guild, who this year had a room to themselves which they proceeded to fill, starting early the day before the opening. As might be expected, a proportion of the models were appropriate to the occasion, with no less than five traction or showman's engines, a Statellite and a lorry-mounted Fair Organ which emitted suitable music from a hidden loudspeaker.

Some dozen Guild members, plus David Hearn and John Lavers who were invited to join the exhibition by Chairman Ernest Chandler, and Hon. Treasurer David Goodman's boys Matthew and Peter, exhibited almost 40 models, the President, Esmond Roden, setting the pace with his own selection of seven models. Clocks were much in evidence, there being five in all, and all quite different. A nautical flavour was introduced by Tony Homden's battleship H.M.S. Dreadnought and by Ernest Chandler's canal boat, each being over 6 feet long. Other models included looms, cranes, meccanographs, locomotives, earth-moving equipment, aeroplanes, a tramcar and a full-size one-armed bandit. The Guild members were pleased to be joined on the Monday by members of the Henley Society of Junior Meccano Engineers, who put on their own display for the duration.

There was always several members in attendance to operate the models, answer questions, etc., some spending the major part of their weekend so doing, and they were



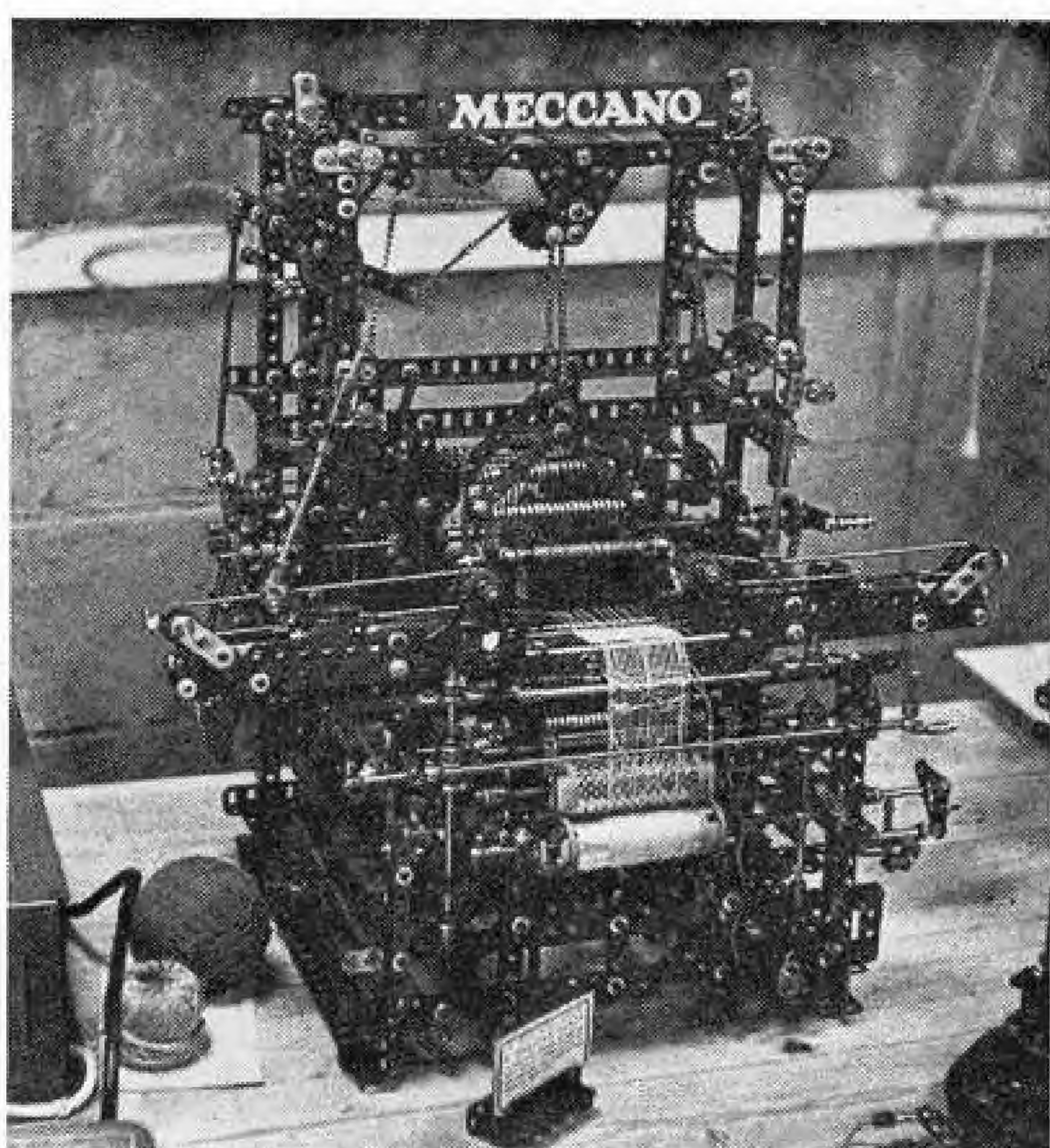
Midlands Meccano Guild Secretary Phil Ashworth tries his hand at skippering Tony Homden's 'Dreadnought' Battleship during the Town and Country Festival at Stoneleigh. Tony can be seen (in part!) behind the model. (Photo: Michael Chandler).

helped at times by the younger generation. (Three members, plus families, actually camped at Stoneleigh over the weekend). Several remarked how rewarding it was to see the looks of wonderment and amazement on the public's faces when their eyes were opened to the endless possibilities of Meccano modelling. Also, it was noted that some of the smaller models attracted just as much interest as the larger ones.

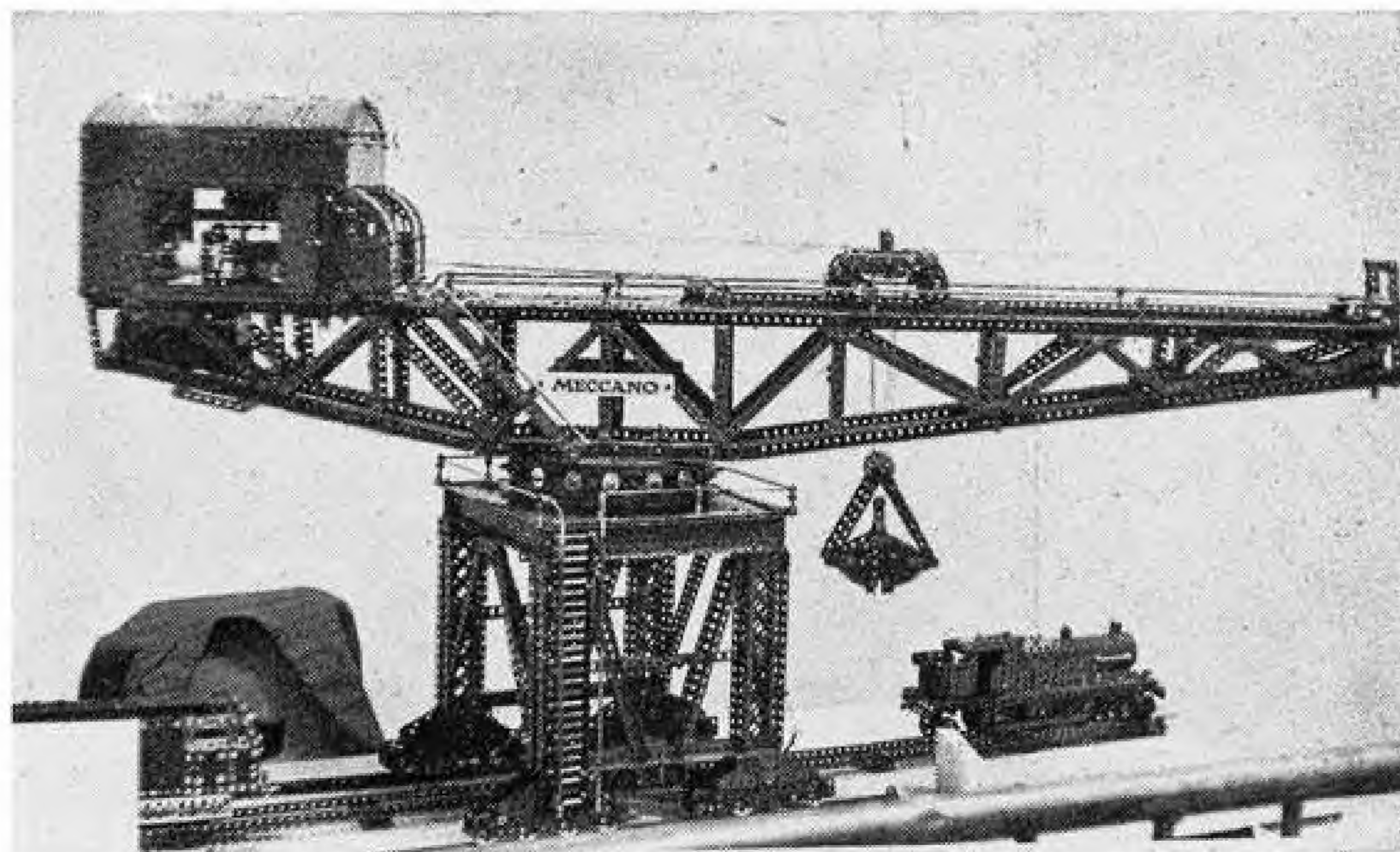
The display was rated the biggest and best yet, but no doubt the Midlands Meccano Guild will be back at Stoneleigh in 1975 with even more models.

The Ed. adds: *At the kind invitation of the Midlands Meccano Guild, I myself spent a thoroughly enjoyable afternoon at the Stoneleigh Festival and I can confirm all of Phil Ashworth's comments. Not only was the show, as a whole, packed with a wide variety of interesting attractions, but the M.M.G.'s Meccano display was really first class. I was amazed at the number of models exhibited by Guild members; I did not take a full count, but there were sufficient to fill - without overcrowding - a very spacious exhibition room. The models were ideally suited to public display, covering many diverse subjects and ranging in size from the small to the giant, and they all appeared to stand up well to the rigours of exhibition work. Members, themselves, did sterling work on the vital job of describing and demonstrating models and generally answering the probing questions of interested visitors.*

For my part, I must apologise to both the M.M.G. and to the organisers of the Stoneleigh Festival, as well as to any readers I might have confused. In my Editorial in the July MMQ, I referred to the show as the "Stoneleigh Summer Carnival". In fact, the correct title should have been the "Town and Country Festival". Sorry everybody; I'll get it right next year!



Left: a superb Meccano Loom - one of several advanced models displayed by John Lavers who was invited to join the exhibition by M.M.G. Chairman Ernest Chandler. (Photo by Michael Chandler). Right: part of the display mounted by Guild President Esmond Roden. The Giant Block - setter made a towering show piece.



WHY BE SORRY?

Mike Nicholls in
Controversial mood with

MECCANO MISCELLANY

A "GATHERING of the Clans", such as the recent Henley Meccano Exhibition, is an excellent opportunity for reviewing current trends in Meccano model-building. For instance, this year has seen a marked increase of interest in fairground machinery and unusual subjects, with a corresponding swing away from cranes. Another advantage of this particular occasion is that it allows one to chat with so many other Meccano-minded people, and one subject that appears to enter most conversations these days is the use of non-Meccano parts.

I wonder how many times someone has said to me, "of course, I've cheated by using that particular part because it's not Meccano", or "What a pity he had to do that; it spoils it really, not being all Meccano". There appears to be a taboo on non-Meccano items, and those who use them speak of their use only in a kind of subdued murmur as if they were confessing to having heaved a mint Geared Roller Bearing onto the dust-cart after mistaking it for a cake-stand! Other related taboos extend to painting parts in non-standard colours and bending or shortening parts.

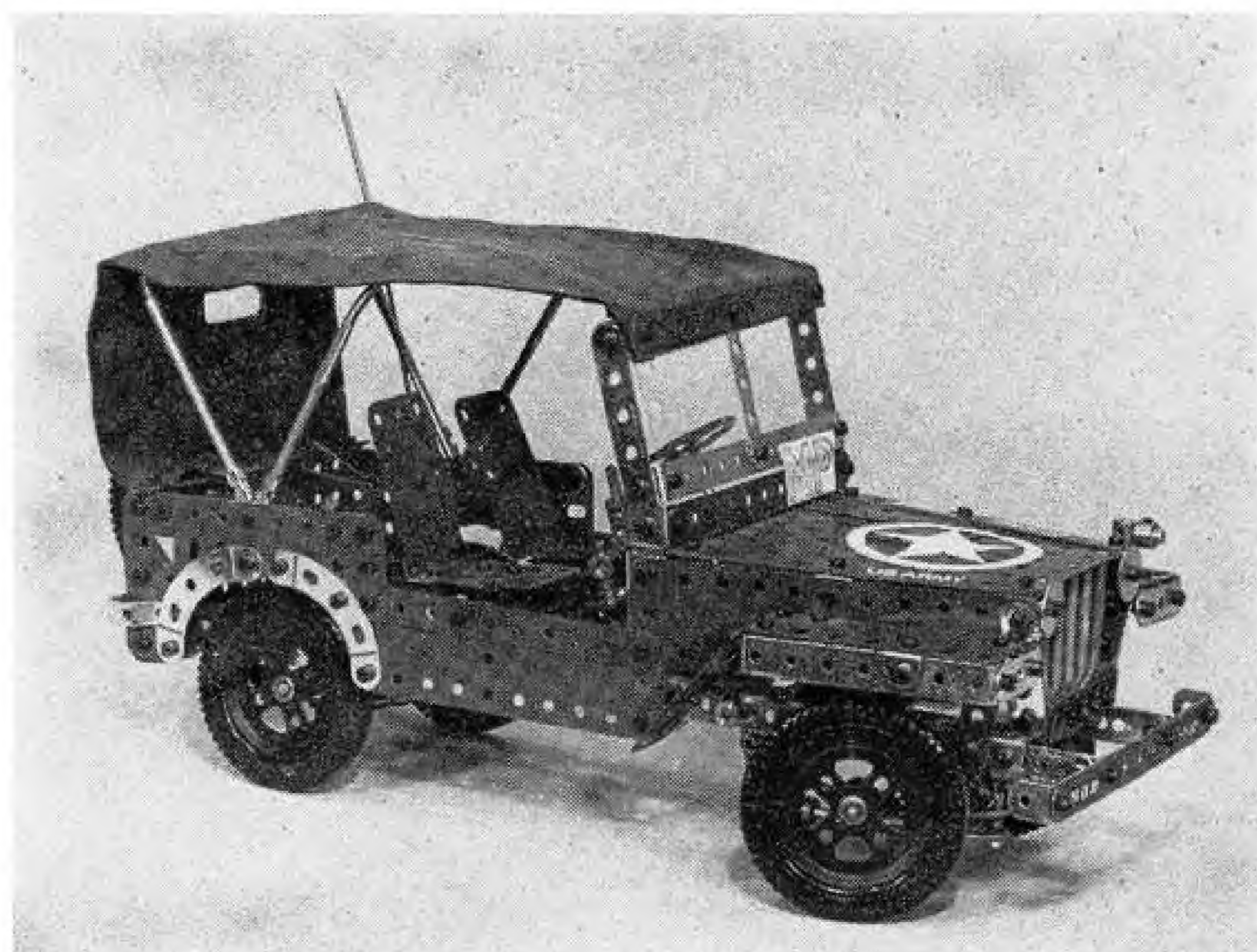
Surely, if a neat solution to a problem can be found by the use of a non-Meccano part, then the builder is quite right to use that part if no solution presents itself within the Meccano system.

I cannot visualize some of this year's Henley Exhibition models without their non-Meccano parts: the Coal Cutter without the snuff box lids for buckets; the Radar Aerial without the wire netting; or the prize-winning Jeep (see photo above) without its canopy. And what of the Chiming Grandfather Clock without its chime tubes, or the Musical Clock without the xylophone?

Don't get me wrong, I'm not suggesting that non-Meccano parts should be used wherever possible, but I don't see why model-builders should be so ashamed of their occasional use.

As for bending parts, it seems strange to me that most people find nothing wrong with bending Flexible Plates, but take great exception to Strips being bent, or even formed parts (e.g., the Formed Slotted Strip) being flattened out. I know a very fine and ingenious modeller who used to make some of his flexible plates and braced girders out of cardboard; when painted yellow and fixed into place, no-one knew the difference! Should that person have refrained from building models because he didn't have enough of these parts? Of course not. Some very worthwhile models would never have been built if he had.

Meccano Limited's own Model Room are very fond of Conical Discs and Chimney Adaptors painted in fluorescent colours, and they often have recourse to run a batch of non-standard length Strips, Girders or Rods



U.S. Army Jeep built by Keith Orpin and using a non-Meccano part for the 'canvas' roof. Mike Nicholls asks 'Is this taboo?'.

for use in displays. And what about the Aerial Ropeway that appeared in the MM in 1930 in which (horror of horrors) *Meccano themselves* encouraged the reader to chip bits off his Bell Crank without Boss!

Of course, unnecessary use of non-Meccano or modified Meccano parts should be avoided, otherwise we'll end up with old baked bean tins welded together and tied to a piece of rubber hose pipe with half a Chimney Adaptor stuffed in one end qualifying as a Meccano model! But *must* the model-builder who uses a non-Meccano or modified Meccano part be so apologetic? Surely, as long as he gets pleasure from his Meccano in his own way, this is justification enough. What say you?



MORE ON HOOKE'S JOINT

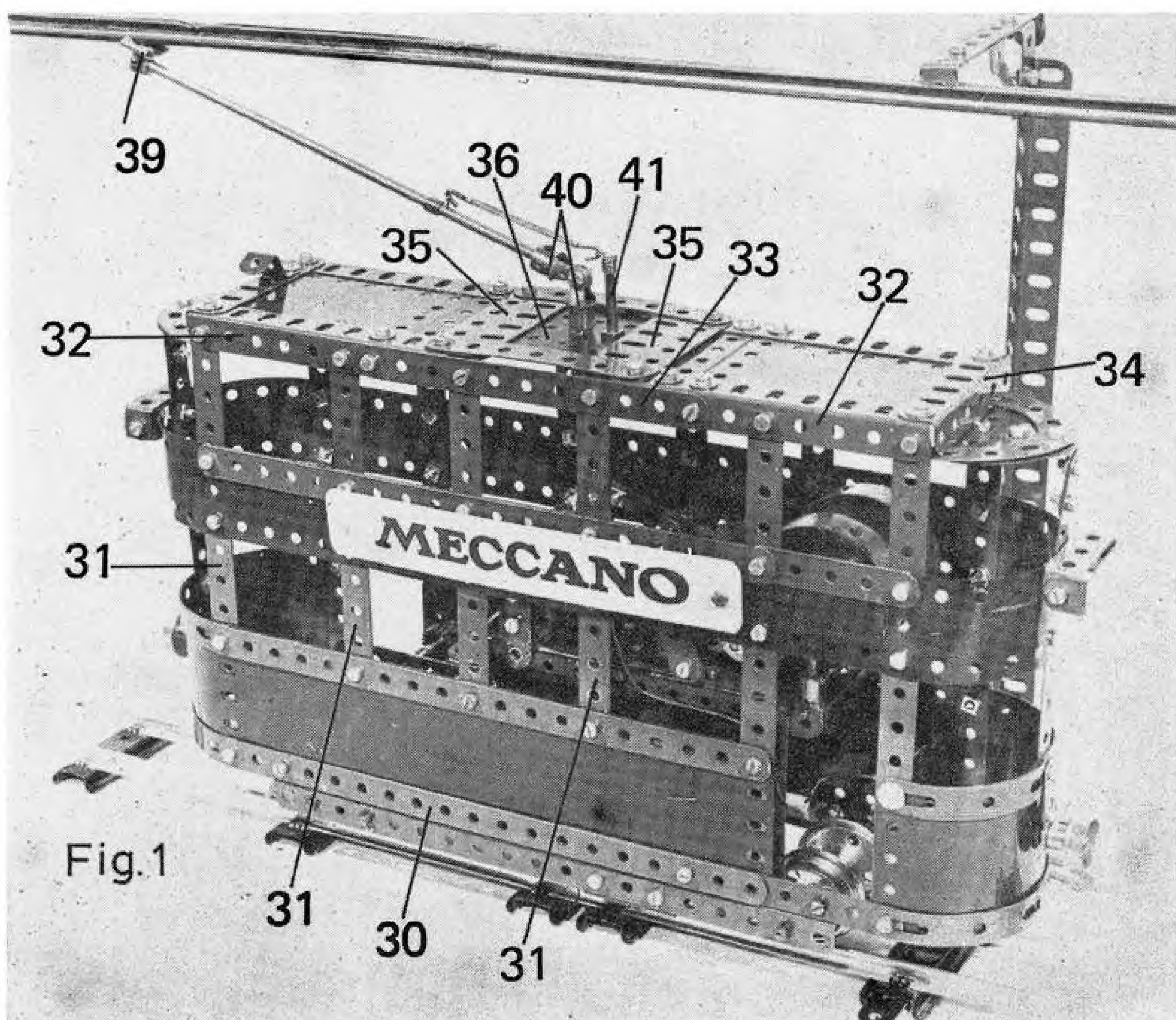
IN HIS LAST Meccano Miscellany, Mike Nicholls touched on the subject of universal joints. Alan Partridge of Sutton Coldfield subsequently expanded on the theme and the following is an extract from his letter. Referring to Hooke's Joint, Alan writes:

"The main thing wrong with it is that the two crossed rods forming the central spider are not in the same plane. However, it would, exactly as drawn, form quite a good model of a different form of transmission, known as 'Oldham's Coupling', used for joining two shafts which are parallel, but not quite in line. As it revolves, the rods in the spider slide to and fro in the Double Bent Strips. This does transmit uniform motion or, as the engineering text books say, it is a 'uniform velocity ratio transmission'.

"The point of this description is that what we are aiming for (and what we do not get in Hooke's Joint) is that, whatever the driving shaft does — either uniform or non-uniform rotation — it should be exactly followed by the driven shaft. But, as the velocity ratio is in fact 1:1, it is a little inappropriate to transfer this phrase from the field of gearing to the field of universal couplings. A better description might be 'equiphase transmission', meaning that, whatever angle is turned by the driving shaft, the driven shaft turns similarly. However, since we all know what we mean, even if we are not exactly saying it, let us return to saying that these various couplings either do or do not transmit uniform motion.

"Incidentally, when I looked it up, I was horrified to find just how bad is Hooke's Coupling. When it is used at an angle of 30° then the driven shaft is, at different positions, 8° first ahead of and then behind where it should be and, in the course of one revolution, its variation in angular velocity is 29%. Taking an example, this would mean that, if the travelling gear of a Block-setting Crane is set up in the worst possible manner, there will be a difference of over 30° between different pairs of Flanged Wheels! This can only be taken up by slip on the rails. No wonder this drive is sometimes found to run rather heavily!

"Again, in high speed mechanisms, the variation in driven speed could easily tear the Universal Joint to pieces if the driven part is heavy, or at very least, it will cause rapid wear".



All Aboard the Ding-Ding Tramcar!

AN AUTOMATED
MODEL BY
JIM GAMBLE

AUTOMATION IS a common enough jingle these days and is more often than not associated with computers and electrical control circuits. However, mechanical programming can produce perfectly satisfactory results without over complication as was demonstrated by Jim Gamble's 'O' gauge Tramcar at a recent meeting of the Society of Advanced Meccano Constructors. Jim's model stole the show for sheer novelty, ease of construction and reliability. Not only does his tram run on standard tinplate 'O' gauge rails, picking up current from an overhead wire, but using a single electric motor, the tram runs a pre-determined circuit, gives a single bell warning before coming to rest and after a short pause the old familiar "ding-ding" sounds before the tram lurches forward again in characteristic manner.

Our thanks go to Bert Love for the following description of the tram as well as for all the accompanying photographs from which it will be seen that Jim has chosen a simple design of double deck car as his subject. The model has been deliberately left free of internal fittings to allow plenty of room for the 'heart' of the drive and bell mechanism. One important feature of the roof construction is that an electrical Insulating Flat Plate is required in the centre to support the Long Threaded Pin and lock-nutted

End Bearing of the trolley pole to insulate this from the car body. Quick removal of the entire car body from the chassis is provided by four Bolts passing into four Threaded Bosses arranged at the chassis corners as can be seen in Fig. 2. Careful study of Figs. 2 and 3 is required, but construction is not difficult.

CONSTRUCTION

Starting with the main gearbox, a pair of $2\frac{1}{2}$ " x $2\frac{1}{2}$ " Flat Plates 1 are bolted to the flanges of a $2\frac{1}{2}$ " x $1\frac{1}{2}$ " Flanged Plate 2 (see Fig. 3.) to form the inner wall of the gearbox. Immediately above the Flanged Plate, a $2\frac{1}{2}$ " Double Angle Strip 3 is bolted inside the Flat Plates to form the first part of the support for the bell strike platform. Before tightening the Bolts on the Flanged Plate, a 3" Rod is run through its central slotted holes, making sure that the Rod runs freely. This Rod is fitted with a Worm 4 at one end and a $\frac{1}{2}$ " Pinion and Collar at the other, all components being inside the gearbox side plates. It may be found that Flanged Plate 2 is slightly shorter than the standard $2\frac{1}{2}$ " Double Angle Strip, in which case the Flanged Plate should be packed away from one side of the gearbox with a $1\frac{1}{2}$ " Strip.

A second $2\frac{1}{2}$ " Double Angle Strip 5 is bolted one hole in from the edge of the gearbox in line with the top

edge of the small Flanged Plate, and this must be bolted up firmly to form a journal for the next gearbox shaft. A 2" Rod, fitted with a small Contrate Wheel 6 and a Washer is passed through the second hole of this Double Angle Strip. A Worm Gear 7 is added before the shaft is passed through Flanged Plate 2, and a 57t Gear 8 is fixed on the Rod outside the Plate. This should be tested for smooth running, then the $\frac{1}{2}$ " Pinion on the first gearbox shaft can be adjusted to mesh with the Worm.

Two more $2\frac{1}{2}$ " Double Angle Strips are required for the gearbox and one of these, 9, is seen bolted across the rear of the side plates, one hole up, in Fig. 3. It is most important to stand off the right-hand Bolt with Washers so that only the Nut thickness appears inside the gearbox to give clearance for a 57t Gear 10 on a $1\frac{1}{2}$ " Rod journalled in one Plate 1 and in the last Double Angle Strip 11 which runs from front to back of the gearbox, as shown. It is spaced by one Washer at the rear to line up the $1\frac{1}{2}$ " Rod correctly. The Rod is free to slide in its bearings.

Shaft number three - a 3" Rod - is evident in Fig. 3, where it runs across the gearbox one hole in and one hole down at the rear. It is shown carrying two $\frac{1}{2}$ " Pinions 12, but the left-hand Pinion may be omitted as it was originally intended

for an additional feature not now included. The Rod is held in place by two Collars, inside Plates 1. The right-hand Pinion meshes with Contrate Wheel 6 and Gear Wheel 10. This Gear Wheel is normally in mesh with the Pinion by virtue of a Compression Spring loading the $1\frac{1}{2}$ " Axle Rod to the left, an external Collar seen in Fig. 2 limiting the inward travel of this Rod.

The last gearbox shaft is a 3" Rod journalled in the rear Double Angle Strip and running forwards into Flanged Plate 2. It carries a Collar, a Cam 13, another Collar and then, on the outside of the Flanged Plate, a $\frac{1}{2}$ " Pinion. This completes the gearbox but adjustments will have to be made when the tram is ready for running.

CHASSIS

The chassis is a very simple construction, as shown in Fig. 2. Two $9\frac{1}{2}$ " Angle Girders 14 form the base and are bridged underneath by a $2\frac{1}{2}$ " x $1\frac{1}{2}$ " Flanged Plate mounted six holes back from the forward end. This Plate carries a Motor-with-Gearbox, as shown. A 3" Strip 15 adds bracing across the Girders just forward of the main gearbox and the gearbox itself is fixed by Angle Brackets to the slotted holes of the Girders. Note carefully that the gearbox is set over to the left, two Angle Brackets being used internally at the base of the left-hand gearbox plate and one Angle Bracket centrally outside the right-hand plate. If a $\frac{3}{4}$ " Pinion is fitted to the motor shaft to mesh with external 57t Gear 8, adjustments can be made to ensure a smooth-running gearbox so far.

Flanged wheels are fitted onto $3\frac{1}{2}$ " Rods mounted in the chassis Girders and held with internal Collars. Spacing for the Flanged Wheels is

set to 'O' gauge standard, the rear axle also carrying a 57t Gear 16 between the wheels. Drive to the rear axle is via a further $3\frac{1}{2}$ " Rod level with the rear axle and mounted in the chassis Girders just below the sliding 57t Gear 10 in the Gearbox. Two $\frac{1}{2}$ " Pinions are fitted to this shaft, one of which meshes with the Gear 16 on the rear axle and the other with Gear 10 above. The gearbox is set in the 6:1 ratio and the tram so far built should now be tried on a short run, to test the transmission. Shaft alignment and bearings should be checked for smooth running.

BELL PLATFORM

All construction for the bell platform is carried out on a $5\frac{1}{2}$ " x $2\frac{1}{2}$ " Flanged Plate 17, one end of which is fitted with a $2\frac{1}{2}$ " Girder for attachment to the gearbox. One left-hand and one right-hand Flanged Bracket 18 (Part Nos. 139 and 139a) are bolted to the Plate, as shown, and are bridged with a $2\frac{1}{2}$ " x 1" Double Angle Strip, locked in place by a $1\frac{1}{2}$ " Strip 19 at each side, on to the Flanged Brackets. The Double Angle Strip forms a check bar for the bell strikers which consist of $3\frac{1}{2}$ " Narrow Strips 20, spaced on a 3" Rod with Collars and Washers, as is clearly

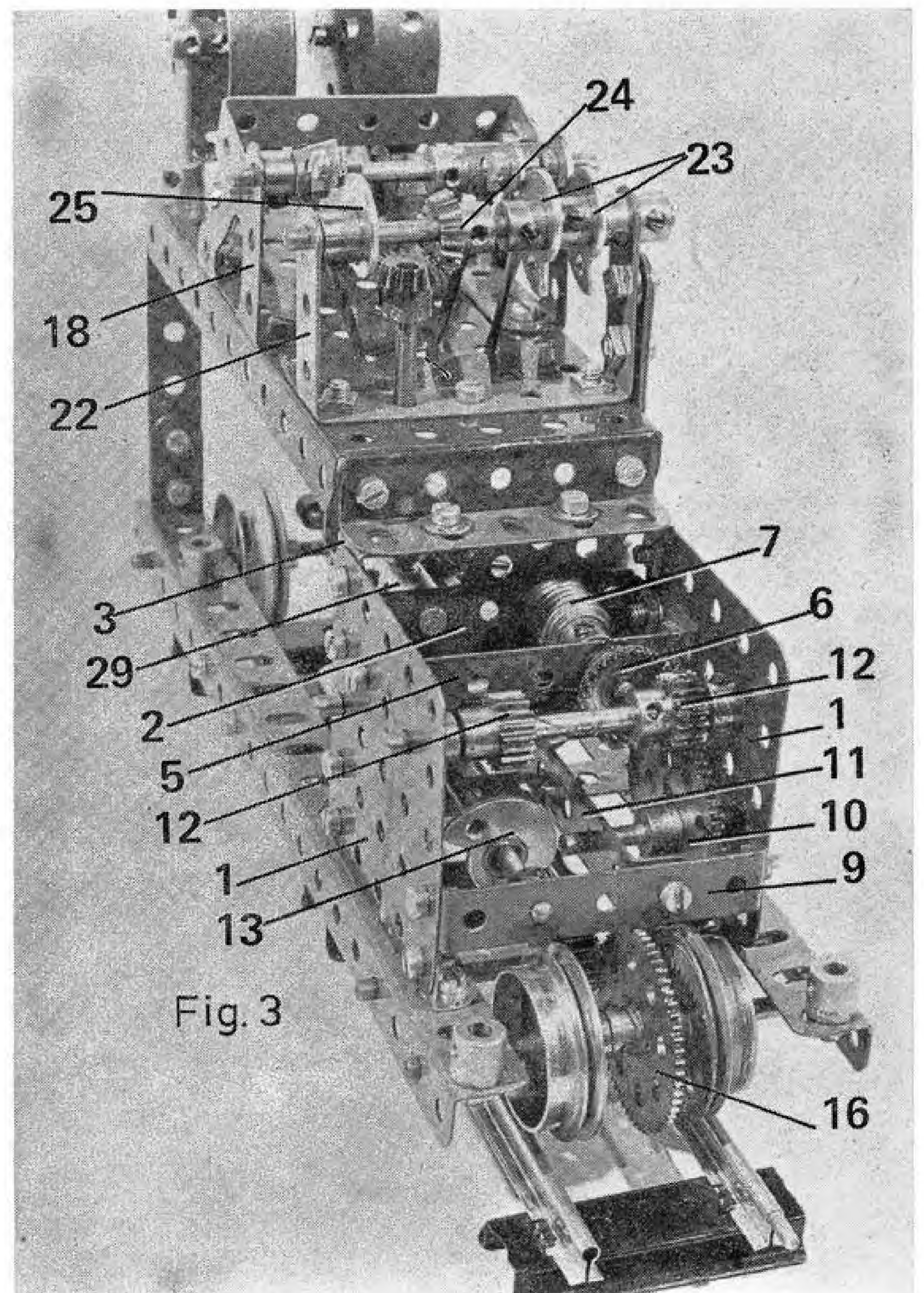
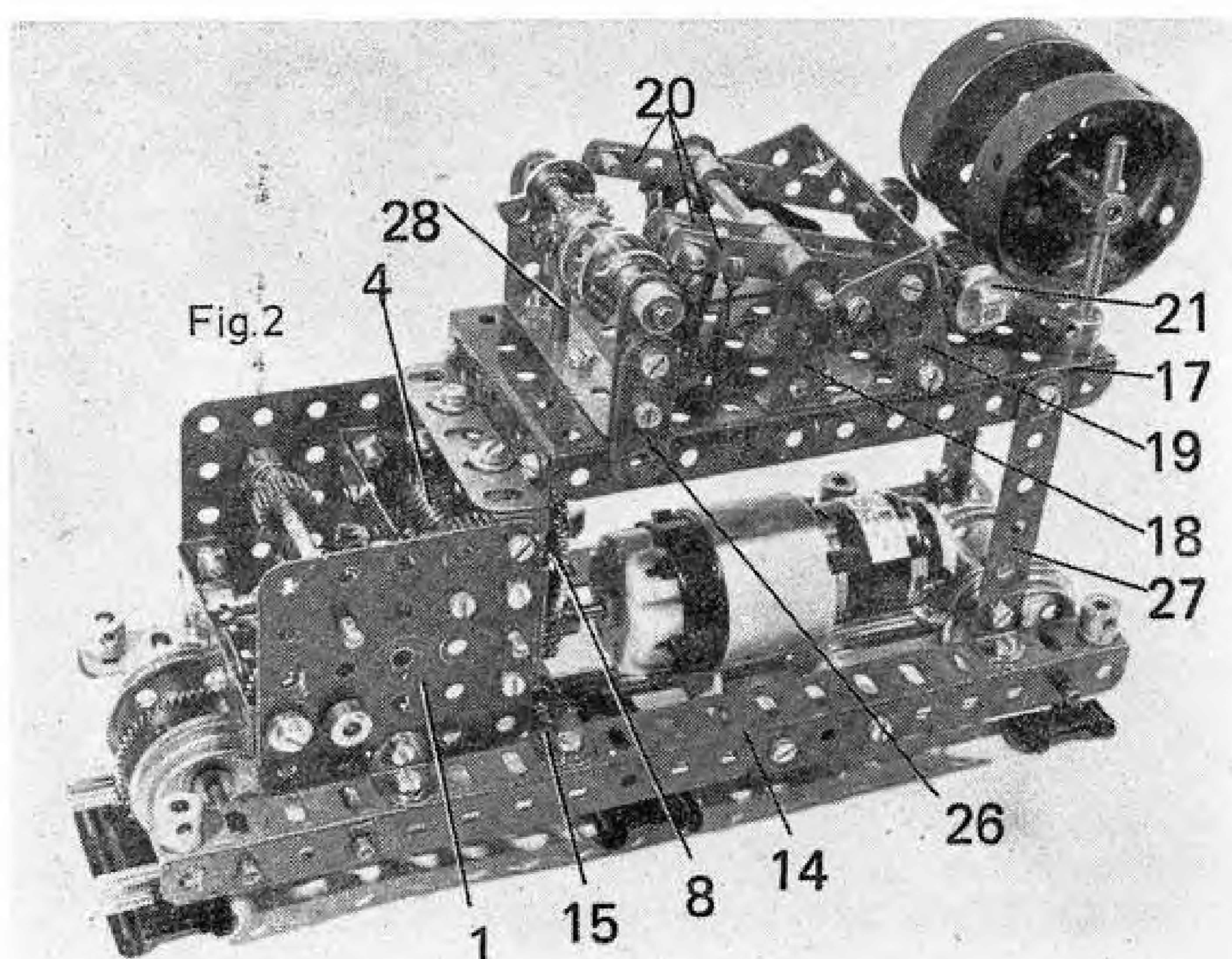
shown in Fig. 2. The Rod is journalled in the top holes of the two Flanged Brackets. Each Narrow Strip is fitted with a $\frac{1}{2}$ " brass Pulley 21 by means of $\frac{3}{8}$ " Bolts and lock-nuts to form bell hammers, the opposite end of each Narrow Strip being fitted with a standard Bolt and Nut.

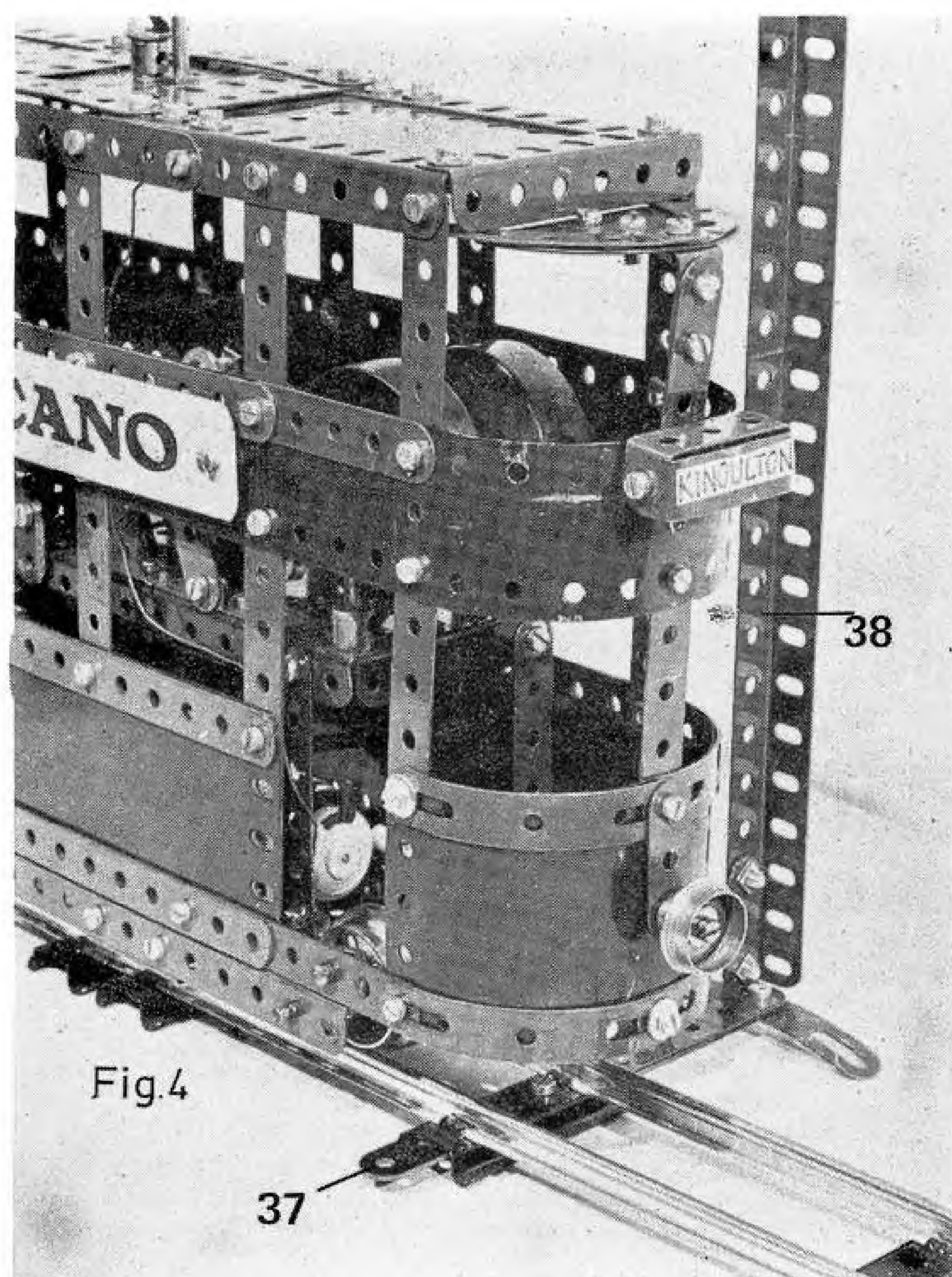
Return 'springs' for each striker are provided by $2\frac{1}{2}$ " Driving Bands looped through the Narrow Strips, as shown, and passed through the holes in the Flanged Plate immediately below, where they are trapped by a $2\frac{1}{2}$ " Rod fitted with Collars at each end. Two Boiler Ends are used for bells and these are fitted with a lock-nutted $\frac{3}{8}$ " Bolt which is then fitted tightly into a Threaded Coupling. This, in turn, is mounted on a 2" Rod held in a Rod Socket at the corners of the Flanged Plate. Set the bells at a suitable height and try flicking the strikers. Adjust the bell height until a clean, sharp "ding" is obtained.

CAM SHAFT ASSEMBLY

Careful construction and adjustment is required of the cam shaft assembly as it is the heart of the entire 'programming' of the Tram's mechanisms. A $2\frac{1}{2}$ " x $1\frac{1}{2}$ " Double

Fig. 1 (opposite page): a general view of Jim Gamble's self-programming Tramcar. Note the overhead 'live' rail. Fig. 2 below: the chassis with bell platform and cam shaft bell-strike mechanism. Fig. 3 right: the automatic gearbox.





A close-up view of Jim Gamble's automated Tramcar showing front-end detail of the Tram, itself, and one of the supporting standards for the overhead power-feed rail. Although Jim's original model uses obsolete Hornby O-gauge track, readers may of course build their own track and overhead rail from Meccano parts, provided the track is insulated from the standards carrying the overhead rail. Construction of the Tram bodywork is clear from this illustration and the illustration on page 98

need for step-by-step instructions here. Suffice it to say that a lower supporting 'ring' is built up from two 11½" compound strips 30, one at each side, connected at front and back by two Formed Slotted Strips to provide the rounded contours of the ends. Each compound strip is supplied by one 9½" and one 5½" Strip overlapped seven holes. Bolted to the 'ring', in the positions shown, are a number of vertical 7½" Strips 31 to which an appropriate supply of Flexible, Strip and Transparent Plates, Formed Slotted Strips and ordinary Strips are secured to supply the necessary panelling and windows. These are all evident in Fig. 1.

The roof edging at each side is supplied by two 4½" Angle Girders 32, separated by a distance of four holes, but connected by a 5½" Strip 33. The outer ends of the Girders at each side are themselves joined by a 3½" Angle Girder 34, while bolted between the inner ends of the Angle Girders at each side are two 3" Flat Girders 35. The roof is then enclosed by Flexible Plates, except for the centre section which is enclosed by a 2½" x 2½" Insulating Flat Plate 36, tightly sandwiched between Flat Girders 35 and the inner edges of the above-mentioned Flexible Plates. Accouttments, such as route indicators and headlamps, and the general finishing-off requirements are clear from the photographs.

TRACK AND POWER ARRANGEMENTS

Clockwork 'O' gauge railway track may be used for this model and, so long as sharp-radius curves are avoided, standard Meccano Flanged Wheels will be adequate. Readers will note that an early pattern of Flanged and Grooved Wheels are used in Jim's model. This was to allow it to run on an oval track of Hornby 'O' gauge rails with 2ft. radius curves. If difficulty is found in getting the tram to take curves using standard Flanged Wheels, the wheel base should be shortened (possibly by using small Flanged Wheels at the front) or the forward end of the chassis should be modified to allow the front axle to pivot.

Fig. 4 shows the insulated connection from the rails to the standard carrying the overhead rail. A 5½" Insulating Strip 37 is bolted to the rail 'sleeper' and is reinforced externally by a Flanged Bracket (Part No. 139 and 139a) bolted to the end of a vertical 12½" Girder 38, but raised by a Formed Slotted Strip to give ground clearance and support. Single

Angle Strip 22 is fixed to the bell platform one hole in from the rear end as seen in Fig. 2. The second hole from the left must give clearance for a 2½" Rod which will carry the bevel drive to the cam shaft. Mounted in the top holes of the Double Angle Strip is a 3" Rod which carries two Collars at the right hand end to stabilise the shaft, two Cams 23, a small Bevel Gear 24 and a third Cam 25. The Cams should be set up in the positions shown in Figs. 2 and 3, and note that there is quite a 'stagger' between the setting of the first single Cam and the other pair. The two which are close together have only a slight stagger distance between them. It is the single Cam that gives the 'ding' for signalling the tram to stop and the twin Cams give the 'ding-ding' for signalling the tram to move on again. Note that two thicknesses of 1½" Strips 26 are bolted to the right-hand end of the Double Angle Strip to bear against the edge of the bell platforms. This is to prevent side thrust from the Bevel drive causing the Double Angle Strip to bend sideways and disengage the Bevels.

At this stage the bell platform is mounted on the gearbox, but, as it is offset, like the gearbox, to the left, it is supported at the front end of the chassis by a side leg (a 3" Strip 27) at the right and by an end

leg at the left. This arrangement is clearly shown in the illustrations.

Fig. 3 shows the fourth Cam 13 in the gear train mounted in the bottom of the gearbox and its job is to push the short sliding 1½" Rod to its right and hence to disengage Gear Wheel 10 from the driving mechanism to halt the tram for a short period. The far end of this 3" Cam Shaft carries a ¾" Pinion outside the gearbox to mesh with a small Contrate Wheel carrying the drive upwards to the small Bevel on the upper cam shaft. The lower bearing for the vertical Bevel-carrying shaft 28 is a Threaded Coupling 29 (see Fig. 3.) bolted to the outside of Flanged Plate 2. This must be adjusted carefully in conjunction with the 2½" Angle Girder on the top of the gearbox to give an absolutely free-running journal for the vertical shaft passing up through the bell platform. Note that the two small Bevels are in unorthodox mesh, not being designed to mesh together at 90°. However, they work perfectly satisfactorily at the low speed of the cam shaft and they give the necessary clearance for the sweep of the left-hand Cam. Collars and Washers are used to locate the vertical shaft.

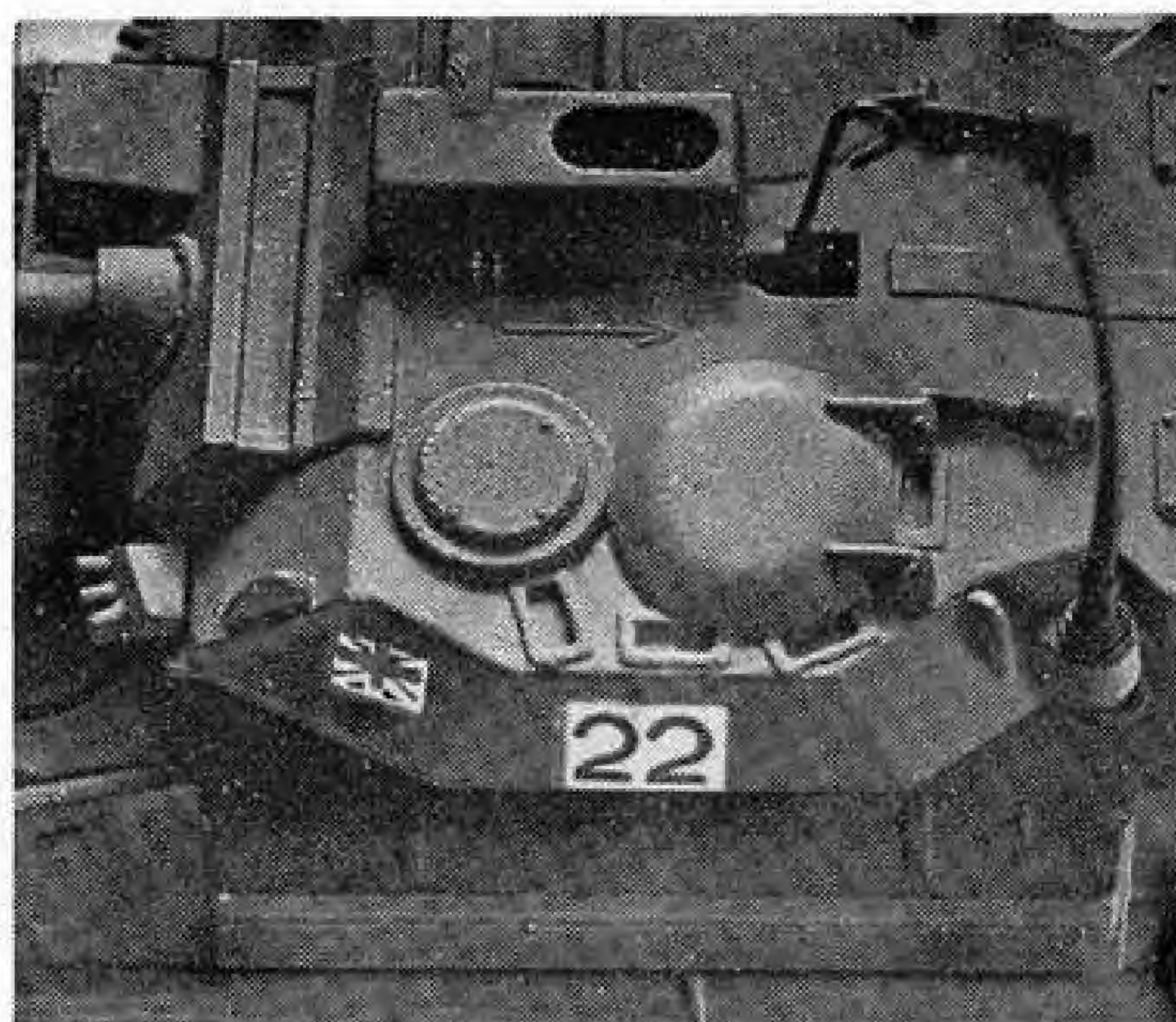
BODYWORK

To a large extent, the construction of the bodywork is clear from Figs. 1 and 4, therefore there is no

Continued on page

A look at the new Dinky Toy models released since the last issue of "Meccano Magazine Quarterly".

DINKY TOYS NEWS



Above, No. 690 Scorpion Tank produced to 1/40th scale and measuring 120mm in length. Features include a realistically-detailed body casting and twin whip-type aerials. Action features include a magazine-loading firing gun (magazine holds four "shells"), a revolving gun turret and flexible tracks. Overall finish is in matt olive drab with black aerials. Comes complete with twelve "shells", a realistic camouflage net and a sheet of waterslide identification transfers. Left, close-up of the magazine loading aperture and firing lever.



Above, a close-up of the rear of the Rally Capri, clearly showing the aerofoil stabilizer and rear louvres.

Above left, No. 2214 Ford Capri Rally Car – third in the new range of big 1/25th scale models. The model is packed with fine detail and sports a wealth of action features ranging from opening doors, bonnet and boot, through fully-fitted-out interior, engine, underbody and exhaust details right down to scale reproductions of the original's 'mag' wheels. Rally-orientated features include a boot-mounted aerofoil stabilizer, a louvred rear windscreen panel and spotlights. Overall finish is in red with a black roof, bonnet, louvre panel and airfoil, and the model sports a host of competition numbers and advertising decals.

A RANGE WITHIN A RANGE

AS REPORTED in the July MMQ, the ever-increasing range of do-it-yourself Dinky Kits now includes the Chieftain Tank. By the time Christmas arrives, however, there will be no less than four military subjects available – sufficient to qualify as a range within a range, and they will in fact be recognised as such. Instead of being identified simply as "Dinky Kits" they will be titled "Dinky Military Kits".

Our picture (left) shows the four models which will be available for Christmas: from left to right, the Chieftain Tank, the 155mm Mobile Gun, the Leopard Tank and the Striker Anti-tank Vehicle. They surround the brand new Striker Kit, which should be available by the time this issue goes to press, and it can be seen from the pack how well the new military title stands out.

As a range of finished models, the military Dinky Toys are high in the best-seller lists. The Dinky Military Kit range should prove equally popular with the home constructor.



HALF-HOUR STRIKE MECHANISM

last of the extra mechanisms fitted to Bert Love's No.10 Grandfather Clock featured in the Oct '73 MMQ.

COMPLETION OF THE No. 10 Outfit Grandfather Clock requires the construction of a ½ hour strike mechanism, the essential details of which are shown in the illustration on the opposite page. After providing chain for the winding and moon drive mechanism about a length and a half are left over which are joined to make the chain drive for the strike. One Boiler remains unused and this is loaded with a small handful of washers, nails, etc. to provide a driving weight. 2½" Axle Rods are passed through the Boiler Ends to hold them in place and are secured with Spring Clips. A Single Bent Strip is bolted to the upper Boiler End and a loop in the end of the Sprocket Chain is held in the Double Bent Strip by a Pivot Bolt and Nut. To prevent chain slip, a small counterweight is attached to the trailing end of the Sprocket Chain and this comprises a large Crane Hook passed through a Chain link, the Hook being bolted in a small Fork Piece on the end of a 3½" Axle Rod. Two spare Bevel Gears from the No. 10 Set are fixed to the Axle Rod and it is this end of the chain that is pulled to rewind the strike mechanism.

COMPOUND RATCHET WHEEL

This can be seen in the illustration and is formed from the pair of 2" Sprocket Wheels which are free to revolve on 4½" Rod 9. Two Collars are sandwiched between the Sprockets to act as spacers for the ¾" Bolt which clamps the Sprocket Wheels, and one end of a Tension Spring is secured by a Bolt to one of these Collars. The lower end of the Tension Spring is bolted to a third Collar on a Long Threaded Pin which passes through both Sprocket Wheels, the last Collar mentioned being adjusted to hold the squared shoulder of the Threaded Pin in contact with the Ratchet Wheel 12 which itself is fixed to Rod 9.

On the far side of the Sprockets, a Collar is fixed to hold the loose Sprockets lightly against the Ratchet Wheel. Rod 9 passes into the front lower clock plate but not through the rear plate. A stand-off bearing is provided by a 2½" Double Angle Strip, lugs

inwards, spaced from the rear clock plate by the two Stepped Bent Strips 13. A ¾" Bolt secures the lower spacer and the upper one is trapped by a 2" Screwed Rod, two Nuts and a Rod Connector which acts as a stop pin for the bell striker 8.

GEAR TRAIN

A step-up drive from the Ratchet Wheel shaft 9 to the striking shaft is provided by two sets of 25t Pinions and 50t Gear Wheels, the upper of the two Pinions being clearly shown at 5. One 50t Gear is fixed to shaft 9 and drives the first 50t Gear immediately above it on a 2½" Rod. This same Rod carries the second 50t Gear Wheel alongside the Pinion and both Gears run just inside the front clock plate. The outer journal for the 2½" Rod is provided by a Reversed Angle Bracket secured by its longer lug to the back of the clock dial.

At this stage, the smooth running of this gear train should be tested with just a little weight in the Boiler, the strike shaft itself being a 6" Rod. If the arrangement was left like this, the strike would tend to be over-driven so it is governed for smooth action by a further step-up gearing to a fan acting as an air brake. A slight change from the original design has been adopted, as shown in the illustration, to provide a central journal for the fan shaft. A pair of 2½" x 1" Double Angle Strips support a 4½" x ½" Double Angle Strip 10 as shown. Eight holes up the sloping Angle Girder at the side of the clock, a Flat Trunnion is bolted on with one Bolt and sandwiched at the same time by a 2" Strip. This secures the Trunnion, but allows it to be set slightly downwards to line up with the fan shaft and to provide an outer journal. A pair of 5½" x 1½" Transparent Plates 11 make the fan, or air brake, and these are held in position by the two Small Fork pieces and Collars shown. Two small Driving bands secure the Plates in close proximity to prevent 'flapping'. The Meccano fan at the end of the shaft merely adds a little to the air brake effect.

An 8-hole Bush Wheel is fitted with a Threaded Pin and a ¾" Bolt 7, diametrically opposite, to form tripping pins for the strike lever 8. The strike lever itself is a 2" Rod fixed in a Slotted Coupling which is free to pivot on a Long Threaded Pin. Spring Clips and Washers locate the Coupling laterally. A 3" Narrow Strip is attached to the Coupling with a Bolt and lock-nut and its bottom hole is fitted with a Nut and Bolt to make a bell hammer. To provide a limited return motion to the striker arm, a Tension Spring is fitted to the strike lever rod and taken, via a Fishplate, to the rear of the clock's main winding shaft. Fig. 7 on page 64 of the October 1973 M.M.Q. shows this quite clearly. (The 2½" Triangular Plates shown in the original Fig. 7 now provide strengthening pieces at the junctions of the sloping Angle Girders where they meet the side of the clock dial framework.

The 6" strike shaft is passed through the rear clock plate and centre holes of the 2½" x 1" Double Angle Strips. It carries a ½" Pulley 6 acting simply as a Collar, a large Bevel Gear, meshing with the small one on the fan shaft, and Pinion 5, before going through the second Double Angle Strip and the front clock plate. On the far end of the shaft is mounted the release wheel made from two 6-hole Bush Wheels. The innermost of these carries a Threaded Pin which protrudes into one hole of the second Bush Wheel which, in turn, carries another Threaded Pin diametrically opposite, but this Pin protrudes forward into free space.

ECCENTRIC TIMING PUMPS

It now only remains to provide a timing mechanism for the release wheel and this is done in rather a novel fashion by making use of the two small Eccentrics in the No. 10 Set (What has happened to the two large Eccentrics in the No. 10 Set one might ask? — They are ignominiously hidden in the base of the clock in the lowly position of substitute Collars to hold on the front feet of the

DING-DING TRAMCAR

Continued from page 100

lengths of rail taken from old tinplate track form the overhead rail as seen in Fig. 1 and these are held by their own pinching action on the lug of Double Angle Strips bolted to further Flanged Brackets at the top of the Girders.

An 8" Rod forms the trolley arm, the 'slipper' which contacts the overhead rail being a Slide Piece 39. End Bearings 40 form a flexible joint and pivot for the lower end of the trolley arm, while a short length of Spring Cord fitted with hooks gives tension to the trolley arm as shown in Fig. 1. A Cord Anchoring Spring is fitted to the trolley arm and another to the tip of a Long Threaded Pin 41 secured in the Insulating Plate 36 on the tram roof. One wire to the Motor is joined to the Pivot Bolt in the centre of the tram roof and the other wire of the motor goes to a convenient point on the tram chassis.

MECHANICAL SEQUENCING

Once the necessary 12 volt D.C. power supply is connected to the rails and to the overhead conductor, the motor will run and it will run continuously, regardless of what the tram is doing at any particular time. Drive to the rear wheels is fairly direct and at a nice scale speed, but Worm Gears meshing with Pinions are providing a slow drive to the two cam shafts. In fact there are two Worm reduction stages to the lower cam shaft which runs at the same speed as, and hence in phase with, the upper cam shaft. This is important. As the tram moves along, the lower Cam begins to push the short shaft to its right in a sideways direction, very slowly, eventually moving Gear 10 out of mesh, causing the tram to stop.

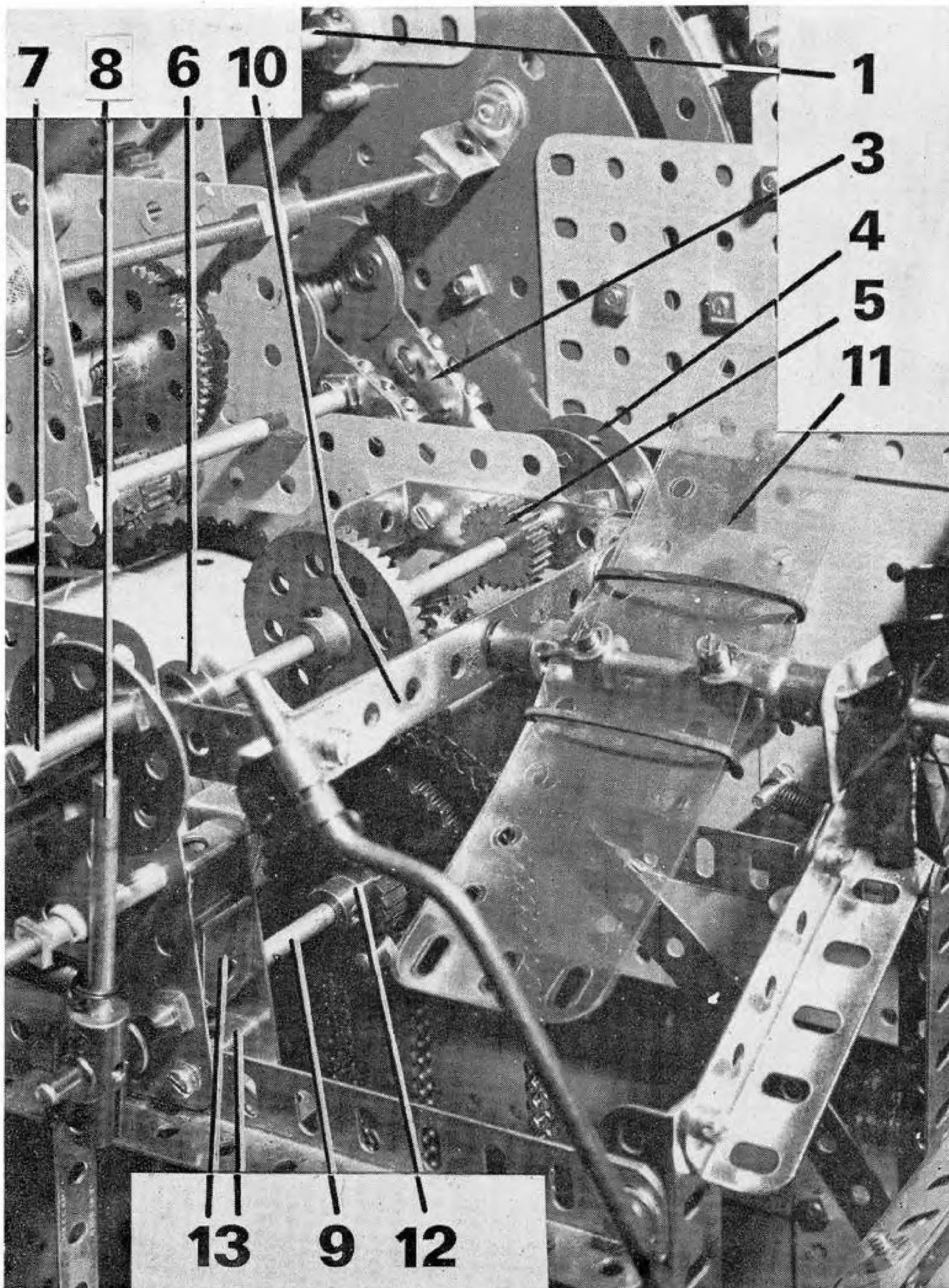
Just before this happens, the single Cam on the upper shaft must be set to trigger its bell for the single 'ding'. While the tram is at rest, the gear train to the cam shaft continues running. After a short pause, the second set of upper Cams gives a 'ding-ding' signal and almost immediately after this, the lower Cam has reached a position where it allows Gear 10 to spring back suddenly into mesh, thus giving the characteristic forward lurch of the old trams and driving the tram round the track until the bell sequence starts once again. Simple, but very effective, very realistic and very entertaining!

PARTS REQUIRED

6- 1a	2-18a	6- 48	1-125
4- 1b	4-20	4- 48a	4-131
14- 2	2-20b	1- 50	1-139
4- 3	3-23b	2- 51	1-139a
3- 4	2-25	1- 52	2-162a
2- 5	4-26	1- 58	2-166
6- 6a	3-27d	2- 58b	2-176
2- 8a	2-29	18- 59	6-179
1- 9d	2-30a	3- 63c	3-186a
4-12	2-32	2- 72	6-189
3-12a	182-37a	4- 90a	2-192
1-14	168-37b	4-103e	2-196
1-16a	36-38	5-111a	2-214
7-16b	1-46	1-115	8-215
2-17	1-47	1-115a	3-235b
1 Motor-with-		1-120b	1-511
Gearbox			

TRAMWAY STANDARD

1-5	9-37a	1- 48a	1-215
1-8	9-37b	2-139	1-501



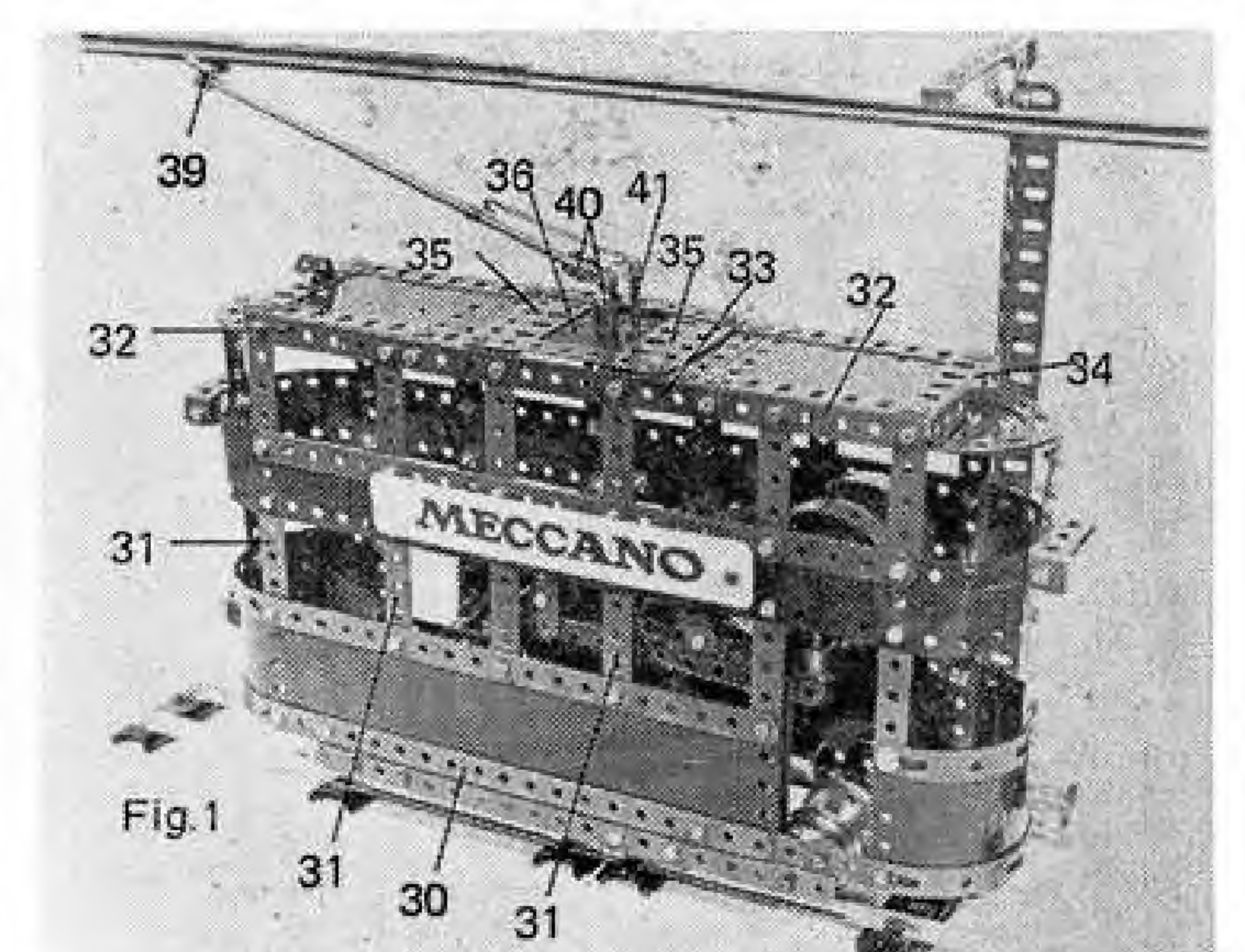
Close-up view of the strike mechanism fitted to the Grandfather Clock which appeared in the October 1973 issue of the Meccano Magazine Quarterly.

clock!). To clarify the photograph and, incidentally, to reduce the bearing friction on the seconds hand shaft 1, the front upper clock plate has been stepped over three holes to the left (as viewed from the rear of the clock.)

Each small Eccentric is fitted with a Coupling which carries a 2" Rod and the Couplings and Rods are fixed by Shoulder Bolts or lock-nutted using Fishplates 3 to take up some of the slack. Just to the left of Pinion 5 a Bolt can be seen and this passes through the Double Angle Strip and front clock plate to hold a Threaded Boss in place. Into this Boss a 1-1/8" Bolt is screwed tightly to act as a slide bearing for the two 'pump' rods.

It will be noted that the Eccentrics are mounted on the minute shaft at a

displacement of 180° and it is this setting which must be adjusted to permit the clock to make its single strike exactly on the hour and the half hour. The inner Eccentric releases the Bush Wheel Pin seen at 4, allowing the strike shaft to rotate through 180° before the Threaded Pin on the outer Bush Wheel is trapped by the other Eccentric Rod, and so on, alternate release and trap operating at each half hour period. The position of the Strike Wheel pins 7 must be set just right by adjusting the 8-hole Bush Wheel's Grub Screw so that a clean strike is obtained, the Boiler weights being adjusted at the same time. Free-running bearings and a minimum weight in the Boiler is the secret. Properly set up, the strike mechanism will match the clock run on a single wind.



MECCANO CLUB ROUNDUP

All Meccano Clubs are invited to submit reports for these pages. Reports should be approximately 350 words long, and should reach us by the end of the second month before month of publication.

ACORN MECCANO CLUB

In common with other sections of the Church Youth Club (of which it forms a part), the Acorn Meccano Club has undergone a summer recess this year - hence the lack of news lately. (Let us say that we are rewinding our motor - the better to spring into modelling action after the recess!)

While we were still having regular meetings, the keen lads showed an interest in Meccanographs. Just in time for our return to action, Bert Halliday has produced an article on this subject for the 'Junior Meccano Engineer'. I hope this will help keep the lads going on this absorbing theme.

Bernard Dunkley.

HENLEY SOCIETY OF JUNIOR MECCANO ENGINEERS

This year's summer season has been a busy one for the HSJME. On 15th June a coach trip was organised and our members travelled to Stevenage to support the Stevenage Meccano Club's Exhibition at the Pin Green School. As is usual at Meccano Exhibitions, the large room was bursting with models and attracted many visitors.

On July 13th the HSJME were invited to exhibit at the Henley-On-Thames Grammar School Fete. This was our first "solo" exhibition and proved a great success. The Meccano Exhibition was perhaps the most popular part of the Fete but, to be fair, this was due in part to the rain which chased most of the other attractions indoors.

The Henley Meccano Exhibition on August 30th and 31st was a tremendous success and gave the HSJME the chance to show their work to over five thousand people. The large amount of space provided for our Club - together with our very good friends from Stevenage - was soon filled with models of all types. The local press covered the Exhibition very thoroughly and their reports showed a distinct bias towards our club members - it seems that they were particularly interested in our work.

In connection with the Henley Exhibition, Mike Nicholls and I took several models to Southampton to record a videotape which was subsequently transmitted on Southern Television's "Day By Day" programme. Those who saw the programme and were lucky enough to be viewing in colour would have noticed that Mike was wearing a yellow SJME badge throughout the show.

The public response to this summer season of Meccano exhibitions makes one thing clear - Meccano is enjoying an upsurge of interest. Our Club (now just over a year old) has a membership list of over seventy, with new members being enrolled every week. The HSJME continues to attract new members all the time, many of whom live overseas. All the signs point to the fact that our hobby is entering a golden age.

Paul Smith.

HOLY TRINITY MECCANO CLUB

The tenth meeting of the Club took place at the Parish Church Hall, Hildenborough.

Once everybody had arrived and set-up their models, the members and guests seated themselves at one end of the hall and the Club's President, Stuart H. Wilson welcomed all present.

In due course, members demonstrated their models. Due to the large number of models to be shown, it was necessary to restrict speakers to about five minutes each, which did not really give sufficient time for all the points of the more complicated models to be shown.

Some of the splendid models demonstrated at the meeting included an early Steam Lorry by Stuart Day, a Jeep by Keith Orpin, a gambling-type Slot Machine by James Dowdswell, a radio-controlled Dockside Crane by Peter Wilson and a Pacific Tractor by Phil Bradley. An early Orrery and a Pacific Tank Locomotive were shown by Eric Dyeballs, whilst John Middenhall showed a Stiff-leg Steam Derrick and Tony Homden a model of H.M.S. Dreadnought. Brothers Ray and Stephen Senior between them showed a Sternwheel Paddle Boat, a Mechanical Shovel and a Military Tank. Many other fine models were on display, but space unfortunately precludes mentioning them here.

Following the demonstration of models came the refreshment break, during which members were asked to submit their voting slips for the 'Stuart H. Wilson Cup', and the President himself collated the results. The announcement that the winner was Phil Bradley was greeted with a round of well-deserved applause, and Phil came forward to accept the trophy from the President. Phil made a short speech of thanks for the prize, which was well received.

Tony Homden.

MAYLANDS MECCANO AND HOBBIES CLUB

The Maylands Meccano and Hobbies Club is now in its 40th year. Although the membership is at its lowest for several years, the quality of model-building can be said to be of a higher quality than in earlier years. The range of models completed or under construction is quite impressive when our average working membership of about 25 boys is considered. These include an improved version SML4 Giant Block-setting Crane, two well-developed four wheel drive chassis, each with selective four-speed-and-reverse gearboxes and high and low ratio transfer boxes. Other models include a remote-controlled Touring Car, Police Van and Fork Lift Truck, all three models producing two or more remote-control movements.

Earlier in the year our good friend from Melbourne brought over a film of the Exhibition of Meccano Models held in South Africa last year, and we were delighted to have the privilege of seeing such a large range of splendid models in the old and new colour combinations. It was a magnificent film and showed Meccano at its best.

Our Presentation Night for 1973 awards was held earlier this year and awards were as follows:-

Award of Merit for services to the Club - Peter Hayward.

Highest Aggregate Points for 1973 - Clem Bond.

Senior Model of the Year - Gary Macri.

Runner-up to Senior Model Builder - Barry Pearce.

Junior Model Builder of the Year - Kevin Stephens.

Runner-up to Junior Model Builder - Michael Cooper.

Model Builder of the Year - Gary Macri.

Model Building Certificates -

"D" Certificate - Clem Bond.

"B" Certificate - Gary Macri.

Barry Pearce.

The Certificates range from the beginner's "E" Certificate up to the advanced builder's "A" Certificate.

Clem Bond.
Gary Macri.

MIDLANDS MECCANO GUILD

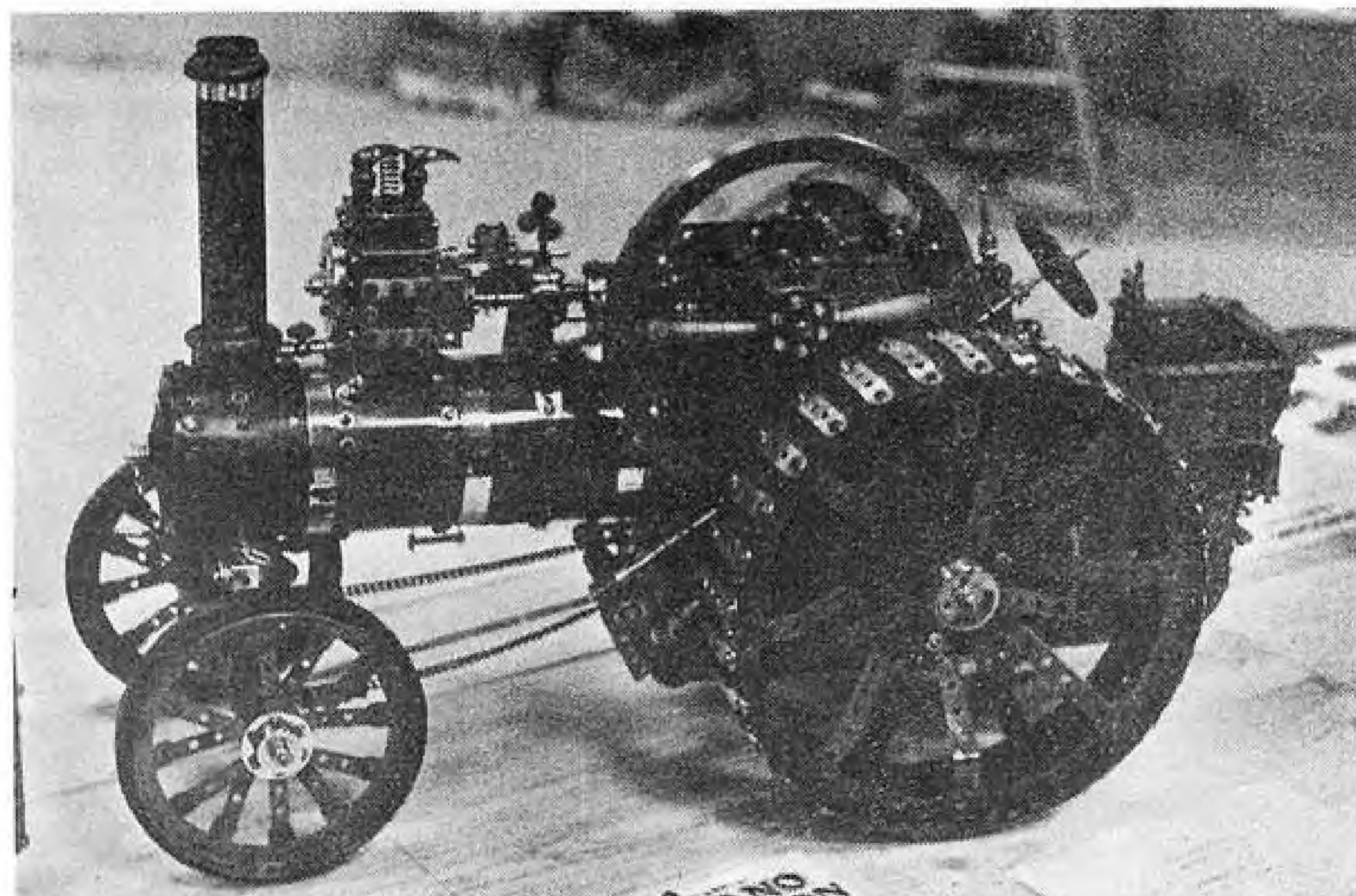
On 21st September, over thirty enthusiasts converged on the Greig Memorial Hall, Alcester, for the 15th meeting of the Midlands Meccano Guild, and were rewarded once more by a splendid and varied display of some 45 models. The members from Henley actually hired a coach to transport themselves and their gear!

Among many outstanding models which were demonstrated individually during the afternoon were a Long-case Clock with full Westminster chime every quarter hour by Jack Partridge and a 4'8" wingspan model of Henson's Aerial Steam Carriage (for aeronautical historians) which Mike Nicholls built in only 36 hours. Also shown were a Land Rover (controlled by pre-programmed cardboard cut-outs) by Clive Hine, an 0-8-0 Shunting Tank Loco by Stephen Lacey and an American Fire Truck by Martyn Brown. The latter was of the elevating platform (snorkel) type, with powered "hydraulics" enabling it to reach the ceiling in one minute.

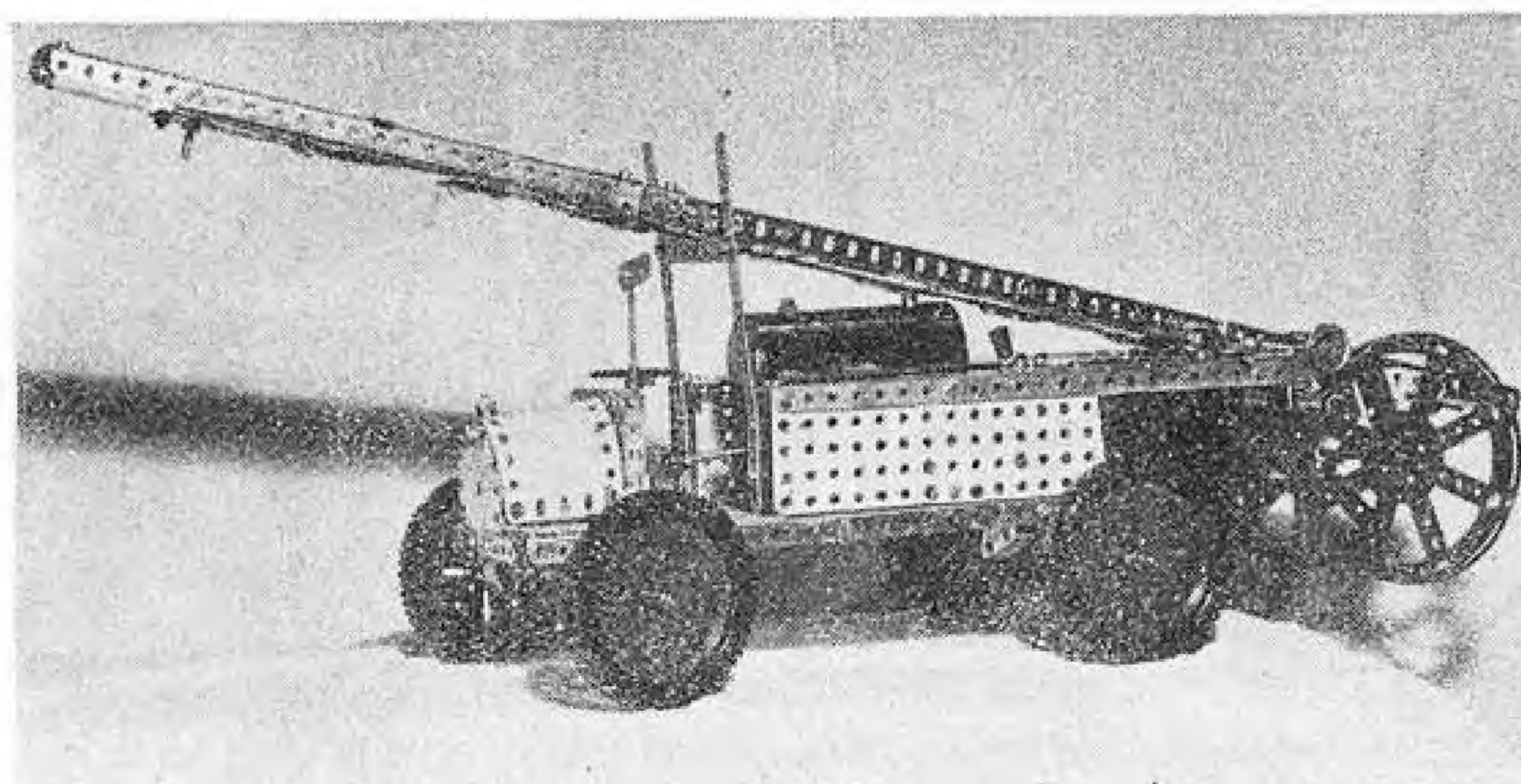
New member, Eric Baldwin, showed a nice pair of Steam Engines - a Traction and a Showman's - whilst another new member, young Paul Smith, demonstrated his self-starting Induction Motor. Other young modellers (whose models were shown by relatives) were Chris Reeve (a J39 0-6-0 Loco with Tender) and Nicholas Sarawyn (a No.10 Set leaflet Combine Harvester). Both were very fine models, and we hope to see their builders another time.

Finally, mention should be made of two brave men who showed partly constructed models - Tony Homden and Mike Pashley. Both looked most promising, so watch this space in six months time for full details!

The meeting concluded with the showing of a superb film of the Meccano Exhibition at last year's Rand



Left, a beautifully-proportioned Traction Engine designed and built by Dennis Perkins of the Midlands Meccano Guild. Below, an operational steam-powered Fire Engine by young Tim Ball, a member of the H.S.J.M.E.



Hobbies Fair in Johannesburg, the film being made for Regal Trading (Pty.) Ltd., and kindly loaned by Meccano Ltd.

Phil Ashworth.

NORTH WEST MECCANO GUILD

A BRIGHT, sunny day greeted members of the NWMG as they made their way to the Chairman's home in Clitheroe for the second full meeting of the year on the 22nd June.

Six new members of the Guild were introduced and welcomed. These were: Norman Chapman from Huddersfield, Alan Grimshaw from Leeds, Bill Charleson from Cleckheaton, Mike Pashley and his son, Stephen, from Sheffield and last, but not least, Norman Mason from Wigan. The new members lost no time in showing existing members just what they were capable of - Norman Chapman presented a faithful reproduction of the pre-war SML Baltic Tank Locomotive finished in shiny new parts. The effect was beautiful. Our other Norman - Mr. Mason - also used completely new parts in his massive version of the famous SML4 Block-setting Crane. This huge model was adequately driven by just one E15R Motor.

The theme of pre-war supermodels was continued by a magnificent Level-luffing Automatic Grabbing Crane by Bill Charleson. Again only one motor was used to drive all movements which is no mean feat. Alan Grimshaw displayed a very impressive Ferris Wheel, which rotated on a turntable as it operated. Flashing coloured lights completed a fascinating effect. A scale model of a powerful diesel locomotive drive unit was shown by Norman Chapman.

Sydney Whiteside, our Chairman, demonstrated his Double Flying Chairs model. An unusual feature of the colourful model was the fact that the top bank of chairs rotated in the opposite direction to the bottom bank. Martyn and Graham Brown did us proud again, this time with a Miniature Giant Dragline Excavator by Martyn, and a fabulous, sleek, fully-detailed Formula 1 Racing Car by Graham. The Secretary showed a Double Cable Cars Model which, with Norman Mason's Block Setting Crane, was used by the local Trustee Savings Bank for a month-long in-Bank display.

The meeting finished at 6.30 pm to give the new members time to get home over the Pennines. All present expressed delight at the number and complexity of the models shown and judging by the number of photographs taken, the memories of this best-yet meeting of the NWMG will be with us for a long time to come.

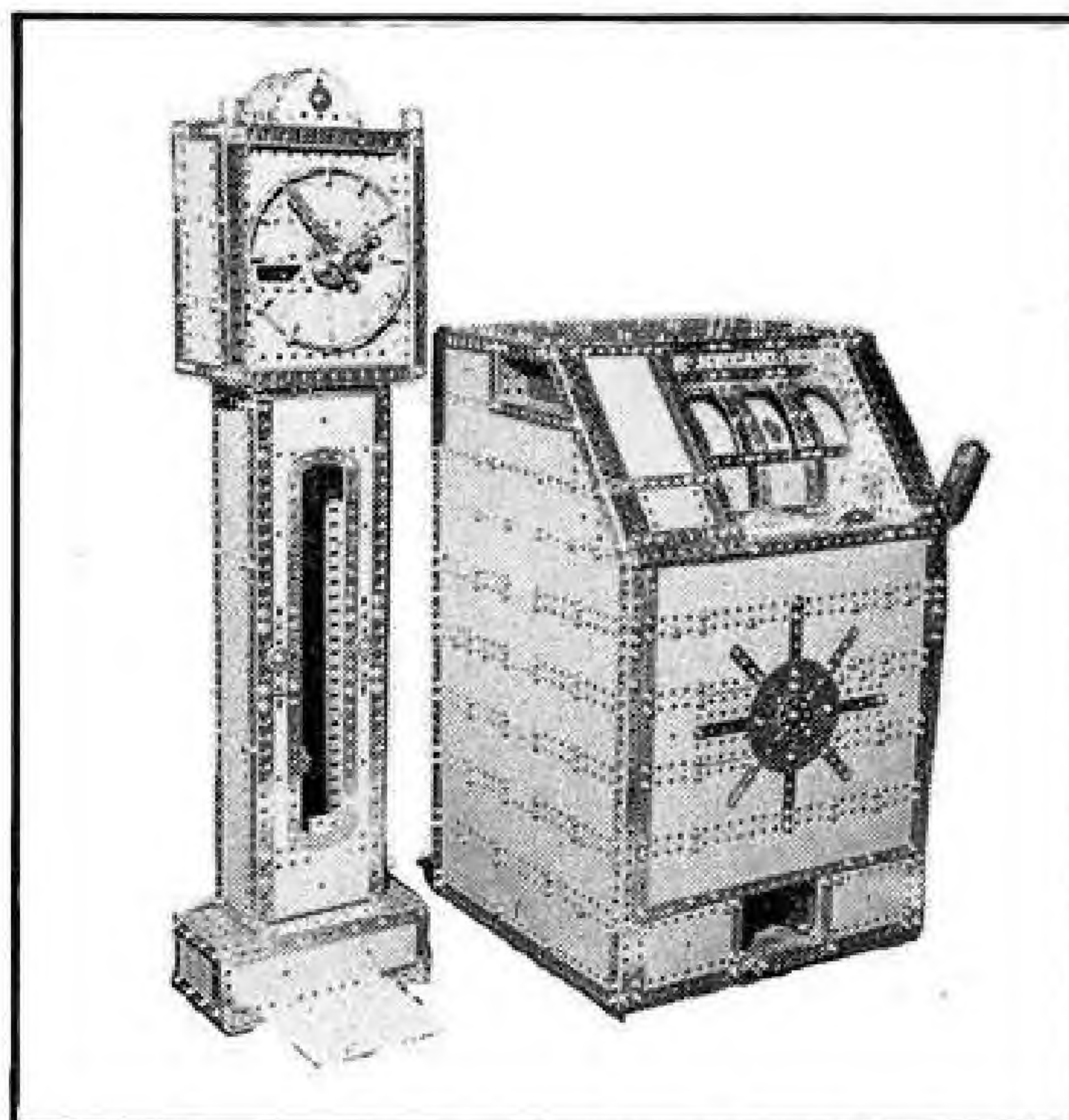
Michael J. Walker

SOCIETY OF ADVANCED MECCANO CONSTRUCTORS

Models displayed at the Society's autumn meeting on September 28th were up to the usual high standards set by the members and a full report on these will appear in the January 1975 issue.

Meantime, the Society has had a very busy summer season supporting local and national shows. Stoneleigh Festival was one of the venues where Roger Wallis showed a very neat Grand daughter Clock, running 24 hours from a standard Meccano Clockwork Motor, and his modified version of the Meccano "Bandit" adapted for decimal coinage. Clive Hine was also there with his marvellous range of Fairground models which attracted continuous attention from all ages.

At the Henley Meccano Exhibition, more Society members were in evidence; Pat Briggs showed the finest example of a Meccano Skeleton Clock to-date, complete with genuine glass dome, and Roger Wallis added the No.10 Set Grandfather Clock by Bert Love to his other Stoneleigh models. Bert, who has recently been made an honorary member of the Henley Society of Junior Meccano Engineers, conjured up yet another No.10 Set masterpiece



Two fine models built by Roger Wallis of the Society of Advanced Meccano Constructors - a 24-hour 'Grand-daughter' Clock and a fully-working Meccano 'One-armed Bandit'.

in the shape of the Italian Battleship "Vittorio Veneto", professionally mounted on a nine-foot-long blue plinth as a centrepiece for the stage of the Henley Town Hall. David Guillaume displayed his auto-reversing Tramway; Paul Blyth demonstrated his automated Strap Cutter - with a standard of reliability on a par with an industrial precision tool - and Michael Martin showed his Cup-winning model of the Steam Block-setter. Clive Hine was ringmaster again at his colourful fairground array - complete with literally hundreds of coloured lamps - the models captivating young and old who thronged the Exhibition. Jim Gamble put on his magnificent show of Meccano antiquities with a staggering display of Meccano and Hornby accessories of the past five or six decades.

Overseas correspondence flourishes with exchange of club reports to Australia, South Africa and Argentina - the latter by way of our latest member, Dr. Jose Ferretti, a devoted Meccano model builder and enthusiast. Modelling standards among Society members continues to delight us all with the unexpected; the novel and the ingenious touches of fertile minds. Details of these are circulated in the Society's regular Newsheets.

B.N. Love

STEVENAGE MECCANO CLUB

On 15th June both senior and junior members of the Society of Meccano Engineers from Henley visited the Stevenage Club. A joint display of fine models, both large and small, was put on at Pin Green School, Stevenage. Thanks are due to all who took part in this very successful venture, with a special mention for organiser Peter Brown who also took over the job of welcoming guests.

S.M.C. Secretary, Dennis Higginson, has been in hospital but is now recovering from a successful operation and so full Club activities should start again soon. Meanwhile, Dennis would like to congratulate all members for the excellent models built during 1974 and all the hard work put into various local fetes and displays.

Incidentally, "Charlie" - a small model robot built in 1966 - has now spent 4 years 3 months in our local Meccano dealer's window, and is currently under-

going a refit. Is this a record time for a model to have been working in one shop?

Jack Farrington - our Cross Keys member - has been in the news again: his photograph with a Traction Engine model appeared in the 'County Leader', a local newspaper with a large circulation. Also included was a full report on his Meccano hobby. Well done, Jack.

A welcome to new members: Paul Bangert (13), Craig Crowhurst (11), and Garry Cooke (10), all from Stevenage.

Listed below are the six best entries from last year's "Pocket Meccano plus One" competition, the extra parts used being shown in brackets.

Howard Barton	- Luxury Dragster (48a)
Reginald Butler	- Guillotine (90)
Paul and Lee Carpenter	- Fire Engine (11)
David Foord	- Field Gun (15b)
Peter Phillipson	- "Spanner" (24)
Mark Wadson	- Toboggan (193)

Additional adult members are always welcome - please contact the Secretary, Dennis Higginson, at 7 Buckthorn Avenue, Stevenage, Hertfordshire or phone Stevenage 53392.

John Foord.

TRANSVAAL MECCANO GUILD

It was very heartening to see such a good attendance - 20 members - at the 13th meeting of the Transvaal Meccano Guild. The meeting started with the usual rambling amongst models and tongue-wagging, and at 2.30 the formal meeting commenced.

Discussion on various aspects of our forthcoming exhibition at the Rand Hobbies Fair took up quite a bit of meeting time. We have some very exciting models, two of the largest being Charlie Roth's mobile Coles Crane (20' jib) and Bill Steele's Bucket Wheel Excavator. Clifford Brown will supply the centre of attraction for the front of the stage in the form of a Transporter Bridge bedecked with coloured lights. Charles Aberdeen is going to stun us all again with an enormous Showman's Engine for the foyer, just to give folks a taste of what is in store for them upstairs!

I must mention one really outstanding model at this meeting; it wasn't an engineering masterpiece, or an exercise in model-building - what was it then? It was a vase of flowers, some of which were ingeniously constructed; so nice in fact that I actually saw someone smell one! Nice work Sandy Arbuckle. Sandy also had his original model of an Ore Crusher at the meeting.

I have been in touch with Marais Spreeth in Bloemfontein, and the latest news from Marais was that he was ready for trials on his Double Fairly: I wish I could be there to see it. His Loco will run the complete length of the Selborne Hall this year - over 66 feet!

Mr. Silberman, of Regal Trading Co. Ltd., has very kindly decided to present the Transvaal Meccano Guild with a floating trophy which will be awarded for the best model of the year at any of our shows. Mr. Silberman has agreed to judge the models himself and present the prizes.

Peter Mathews.

(Peter Matthews has joined Regal Trading Company (Pty) Ltd. - Meccano's South African Distributor - as Product Manager. His major duty will be to promote agency lines at exhibitions throughout the country. Meccano, will of course, come under his wing, and he will be responsible for looking after Meccano exhibitions and affairs in general. This will include keeping the demonstration models in good shape, as well as building new ones from time-to-time. Congratulations on your appointment, Peter. - Editor.)

AMONG THE MODEL-BUILDERS -continued from Page 93

featured in the remaining photographs. Traction Engines are among the most popular subjects for advanced Meccano modellers and many well-known Meccanomen have built some magnificent examples over the years. The models featured here are the work of just two of them - Mr. Ernest Chandler of Stratford-on-Avon and Mr. Brian Rowe of Newton Abbott, Devon.

'My Lady', is the title of Ernest's model and she has drawn many an admiring glance at exhibitions around the country. Weighing about fifty pounds, she is fitted with winch, differential and all the usual steam fittings. Ernest tells me that he is particularly proud of the fly wheel which is built up from six 7½" Circular Strips, spaced by Washers, to result in a realistic wheel with a wide, flat rim, capable of taking the generator belt without the need for a flange. Fitted with coloured lights around the canopy, the model makes an ideal show piece.

Mr. Brian Rowe, is generally recognised by the Meccano fraternity as an expert on steam subjects. Brian, himself, would probably

disagree with the word 'expert', but the two models illustrated will enable readers to understand why I do not hesitate to use it! Both the models are based on the Burrell Scenic Showman's road locomotive of the early 1930's, the larger example being complete with fully-operational valve gear, winch drum and crane, excitor, governor, differential, chain steering and pivoted front axle. It is powered by a now-obsolete 20 volt motor driving through a Meccano-built gearbox to give a choice of three road speeds. The dynamo is adjustable for belt tightening and is complete with commutator and brush holders. In fact, detail throughout is superb and - a useful hint here - Brian has made liberal use of brass-finished parts (such as the thin Strips from the Electrical Set) to enhance the overall effect.

The model was built for a local dealer in Newton Abbott and, because of the tremendous interest it aroused, Brian was asked to build the smaller model to show just what could be accomplished with Meccano. Although smaller, however, I think you will agree that it is not any less of a masterpiece. As the picture shows, detail is not far short of its big brother!

MECCANO® AT BEATTIES



-WE STOCK EVERY SPARE THAT MECCANO MAKE!

Standard sets, Conversion sets, Special sets, Clock kits and Multikit — you will find everything you may require at your local Beatties branch, and as we have an extensive secondhand department you may well find just that obsolete item for which you have been searching. So, whatever your Meccano needs — look into your Beatties branch FIRST!

BEATTIES EUROPE'S LEADING MODEL SHOPS

Retail Branches:

112 High Holborn London WC1V 6JS 01-405 6285/8592
10 The Broadway Southgate London N14 6PN 01-886 4258
363 Lewisham High St. London SE13 01-690 5885
16/18 King Charles St. Leeds LS1 6LT 0532-456611
3 Mount Street Nottingham

Mail Order Department:

10 The Broadway Southgate London N14 6PN

14 Spring Gardens, Manchester M2 1EE 061-834 0229
25/26 South Mall Birmingham Shopping Centre,
Birmingham 021-643 8604

THE JUNIOR **MECCANO** ENGINEER MAGAZINE

Now in its second year, the JME has become part of the Meccano Engineer's required reading, and we are pleased to number countless adults amongst our regular readers. No doubt this is due to the high content of material suitable for adult reading.

Regular readers will have noticed that the JME has a sense of humour; articles, which range from tips to full-scale scientific articles, are presented in a friendly manner.

The current edition - No. 5* contains a major article on Meccanograph design, plus lots more. We think you'll like our style! *15p + 5p post.

Available from: MW MODELS, 165 Reading Road, Henley-on-Thames, Oxon, RG9 1DP, England.



THE CHRISTMAS PRESENT OF A LIFETIME. . .



...FOR A LIFETIME!

MECCANO No. 10 OUTFIT
in FOUR DRAWER

OAK FINISH CABINET £150

Sent anywhere in U.K. CARRIAGE FREE.

Posted overseas without cabinet
at special rates & free of U.K. V.A. Tax

M.W. MODELS

165 Reading Road, Henley-on-Thames, Oxon,
RG9 1DP. England.

Tel: (04912) 3342.

Access & Barclaycard give up to 14 months to pay!

M.W. MODELS

for **MULTIKIT**®



**POST
FREE**

**SUPER
HIGHWAY £8.60**

Still Available:-

ARMY MULTIKIT	6.60
HIGHWAY MULTIKIT	5.85

(Overseas postage extra,
but V.A. Tax Free)

M.W.models

165, Reading Road, Henley-on-Thames
Oxon, RG9 1DP. Tel: (04912) 3342

MECCANO SPECIALIST DIRECTORY

HENLEY (049 12) 3342

M. W. MODELS
"EVERYTHING MECCANO"

165 Reading Road,
HENLEY-ON-THAMES
Oxon RG9 1DP.

Retail and world wide mail order

LONDON

01-734 1846

JEREMY

16 Princes Arcade,
Jermyn Street, London S.W.1

MECCANO specialist in sets, accessories
and spare parts.

LONDON

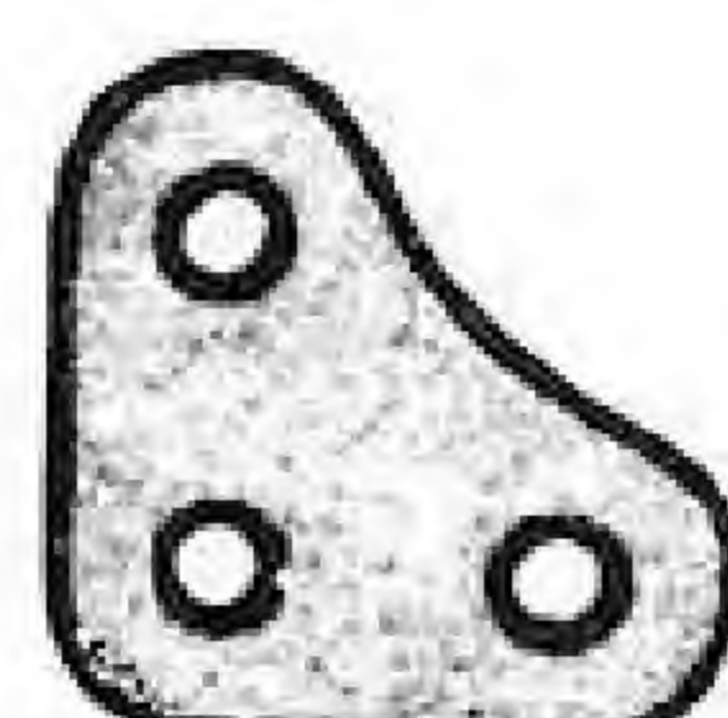
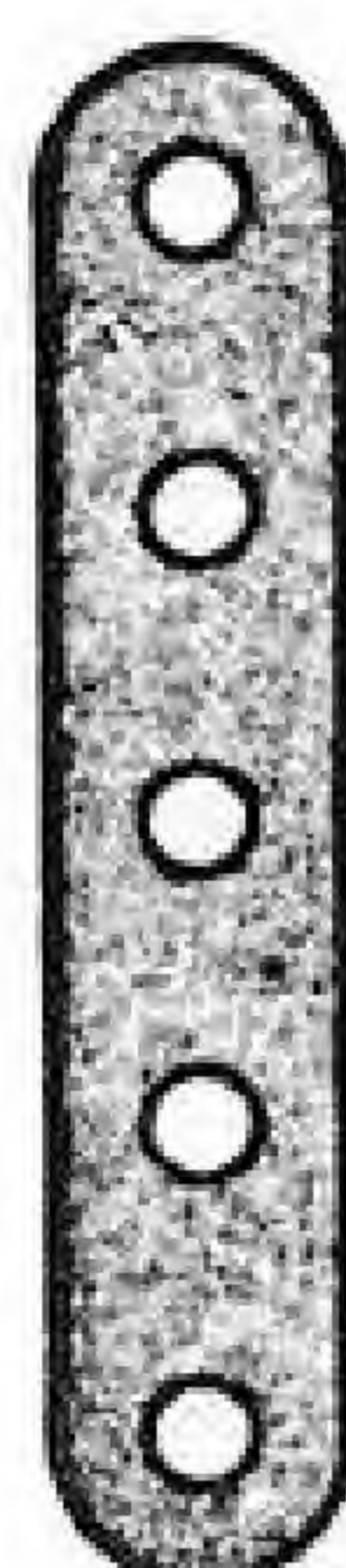
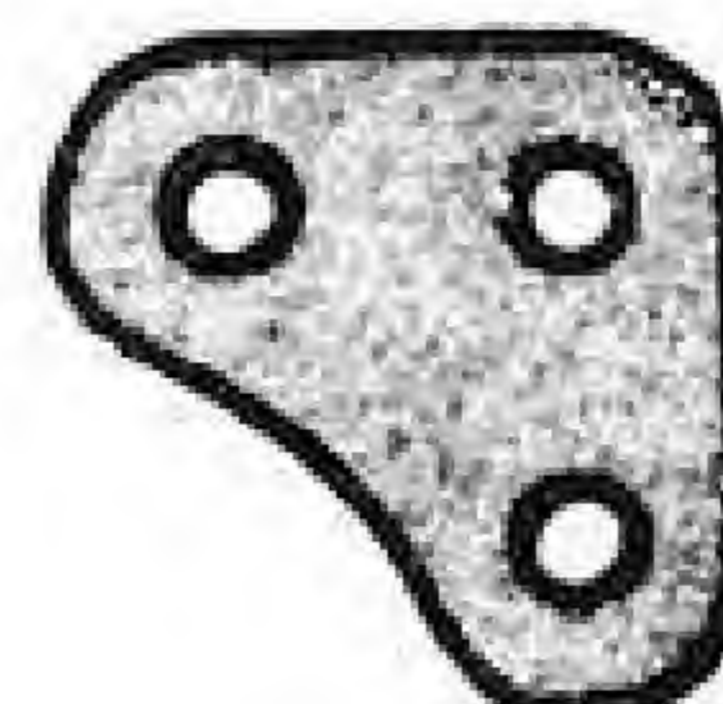
Tel: 01-959 2877

H. A. BLUNT & SONS LTD.,

133, The Broadway,

Mill Hill,

LONDON N.W.7 4RN



All Dealers appearing
in this section

specialise in

supplying

Meccano equipment.

WELWYN

26884

**H. A. BLUNT
& SONS LTD.**

38 FRETHERNE ROAD,
WELWYN GARDEN CITY, HERTS.
Complete range of model aircraft, engines
and accessories, boats, cars and railways.

NEW ZEALAND

BUNKERS LTD.,

P.O. BOX 58
HASTINGS.

Mail orders from all countries welcomed

PORTHMADOG

2802

SIOP MADOC

41 High Street, Porthmadog,
Gwent

MECCANO

and OO/HO Model Railway
specialists.

WEST AUSTRALIA

JACK STANBRIDGE'S
"Hobbyshop",

19 Guildford Road, (at subway),
Mount Lawley, (Perth),
Western Australia.

Full range MECCANO Sets.
Spare Parts available.



THE BIG NAME IN MECCANO

WE STOCK

MECCANO

SETS

Nos. 1 - 10

MECCANO

SPARES

FULL RANGE

MECCANO

MOTORS

ALL SIZES

MECCANO

CONVERSION SETS

1X - 8X

MECCANO

SPECIAL SETS - Inc. GEARS & ELECTRONICS

MECCANO

PLASTIC SETS AND CONVERSIONS

WE SELL

MECCANO

ALL OVER THE WORLD.

MECCANO

BY ACCESS & BARCLAYCARD

MECCANO

BY MAIL ORDER.

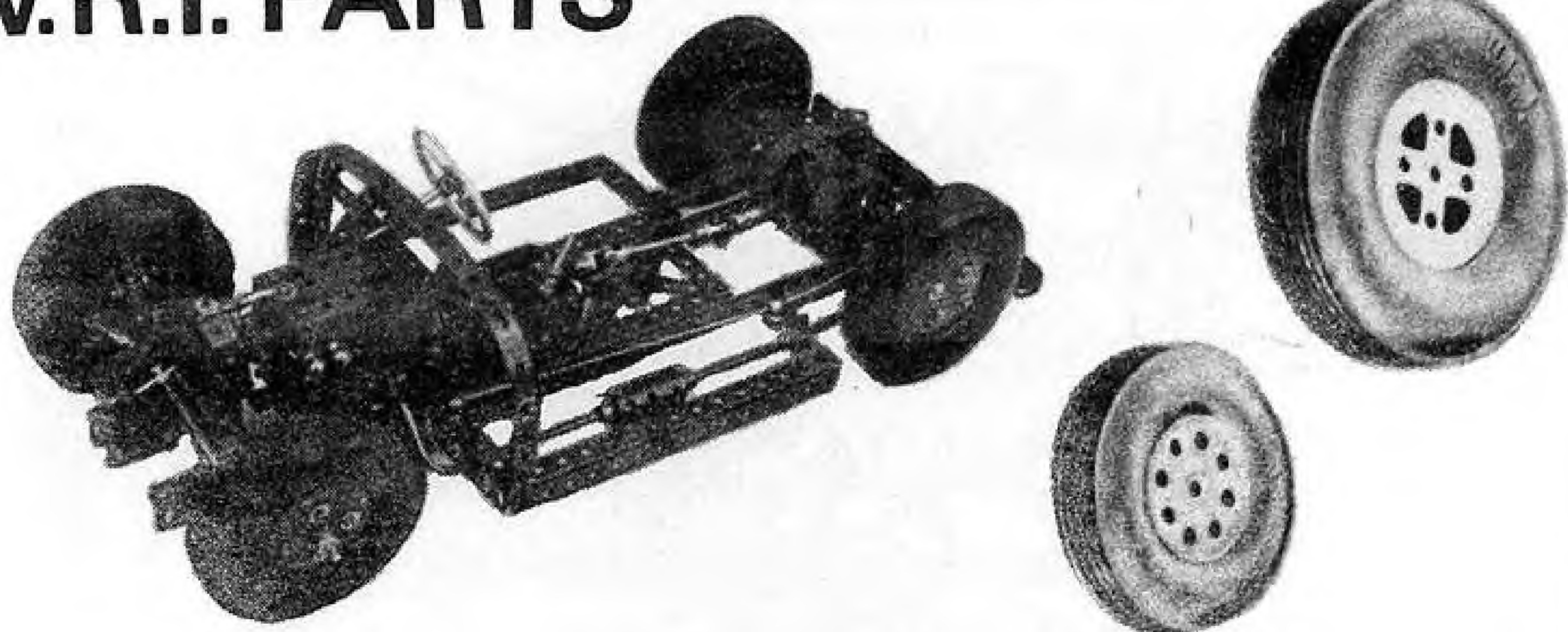
MECCANO

TO SCHOOL AND INDUSTRY.

P.&P. FREE OVER £5 (U.K. Only). SHOP CLOSED ALL DAY
WEDNESDAY. PUBLIC CAR PARK AT REAR OF SHOP.

John W Bagnall Ltd
18 Salter Street
Stafford Tel 3420

W.R.I. PARTS

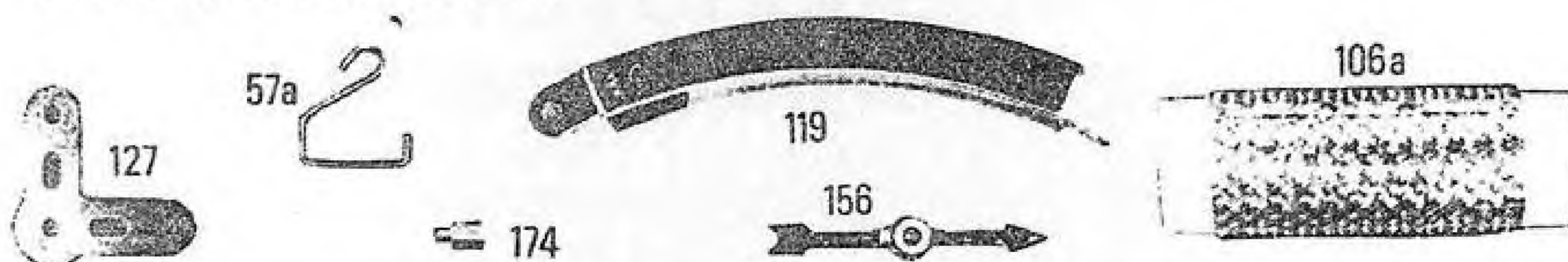


Increase the scope of your Meccano Modelling activities by the use of W.R.I. tyres and Replica Obsolete Meccano Parts.

P/N 142m, 4" diam.	P/N 142s, 3" diam.
Tyre \$1.25 ea.	Tyre 80¢ ea.
P/N 57a, Scientific Hook . 25¢ ea.	P/N 106a, Sand Roller. \$2.00 ea.
P/N 119, Channel	P/N 127, Simple Bell
Segment \$1.00 ea.	Crank 30¢ ea.
P/N 156, Pointer. 75¢ ea.	P/N 174, Grease Cup. 60¢ ea.

All prices in Australian Currency, Postage extra.

Obtainable from certain specialized Meccano Spare Parts stockists or direct from W. R. Inglis, 219 Blackburn Road, South Blackburn, Victoria, 3130, Australia.



CLASSIFIED ADVERTISEMENTS

Rates: Private, 2p. per word; Trade, 3p. per word. Please send advertisements to: Meccano Magazine Quarterly, Binns Road, Liverpool L13 1DA.

FOR SALE: M.M.'s. January '49 to May '56 (less 4 copies) plus majority of others to October '60. Offers & postage. All or any. J.F. Morton, 95, Worcester Road, Chichester, Sussex.

WANTED. Meccano Magazines 1916-45. Manuals, Catalogues of Meccano products, Hornby Trains, etc. Also any Gauge 'O' or 1-gauge locomotives by Hornby, Lowke, Bing, Marklin, etc. Details, price: 12 Leeson House, Haggard Road, Twickenham, Middlesex.

FOR SALE:

MECCANO SETS, spare parts, replica parts, books. All makes of miniature steam engines. Post paid anywhere USA. KENT SNYDER/GOODTHINGS, 437, Cambridge Avenue, Palo Alto, California, 94306, Telephone: (415) 328-8155.

FOR SALE: 3700 new brass-coloured Nuts & Bolts at 75p. per 100. Also 550 new Washers at 8p. per 20 plus postage. Taylor, 25 Armitage Rd., Birkby, Huddersfield.

MECCANO MAGAZINE QUARTERLY ANNUAL SUBSCRIPTION RATES

Surface Mail: throughout U.K. and World - 90p.
Air Mail: Australia, New Zealand - £2.10 Sterling; Canada, South Africa, U.S.A., Argentina - £1.90 Sterling; Malta - £1.45 Sterling. Rates for other countries available upon application.

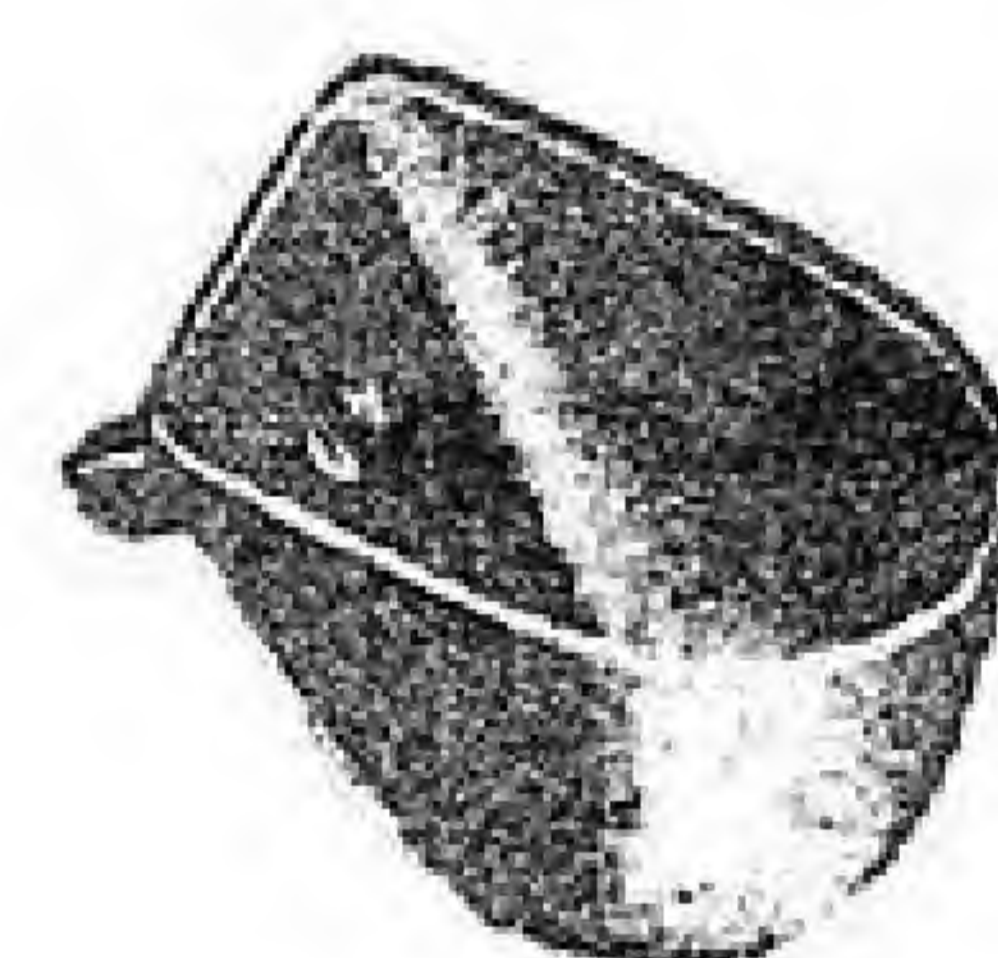
Where possible, currency conversions into Sterling should be arranged by the subscriber before submitting his or her subscription order. Subscription orders should be addressed to: Meccano Magazine Quarterly, Subscription Dept., P.O. Box No. 4, Binns Rd., Liverpool L13 1DA. Cheques and Postal Orders should be crossed and made payable to Meccano Limited.

EVERYTHING MECCANO®

RETAIL & WORLD-WIDE
MAIL ORDER

SETS - MULTIKIT SETS
STANDARD SPARE PARTS
ELEKTRIKIT & ELECTRONIC
PARTS
ARGENTINE MECCANO PARTS
MODEL BUILDING LITERATURE

NEW REPLICA PART



131 Dredger Bucket
22p. + postage.

"STANDARD MECHANISMS"

Postwar MECCANO Reprint. Limited quantity only £2.00 + 5p. post.

NEW M.W. PUBLICATION

"STORY OF MECCANO by the Meccano Boy" Facsimile reprint of the quaint 1912 promotional booklet 40p. + 5p. post.

Reprint of 1916 'Meccano Magazine' No. 1. still available. 15p. + 5p. post.

LATEST MECCANOMAN'S CLUB SUPERMODEL LEAFLETS

No. 49 Automatic Loom
£1.35 + 7p. post.

No. 50 Pattern Programmer
(for above) 42p. + 5p. post.

THE MECCANOMAN'S JOURNAL
(Quarterly) No. 37 October 1974
38p. + 5p. post.

MAGAZINE SUBSCRIPTIONS "MECCANO MAGAZINE QUARTERLY"

"MECCANOMAN'S JOURNAL"
"JUNIOR MECCANO ENGINEER"
G.M.M. 'SUPERMODEL LEAFLETS'
M.W. QUARTERLY NEWSLETTER
& LISTS

We can send any of the above on a regular basis. Just send us, say, £1, stating which magazine(s) & issue you wish to start with.
**FULL BACK NUMBER SERVICE
ON ALL ABOVE.**

For October Newsletter and lists of "EVERYTHING MECCANO" send

Home - Large 5p. S.A.E.
Overseas (Sent by air).

Europe	15p.
America & South Africa ..	18p.
Australia	23p.

Reply coupons are worth 5½p. each
(Commonwealth 3½p. each)

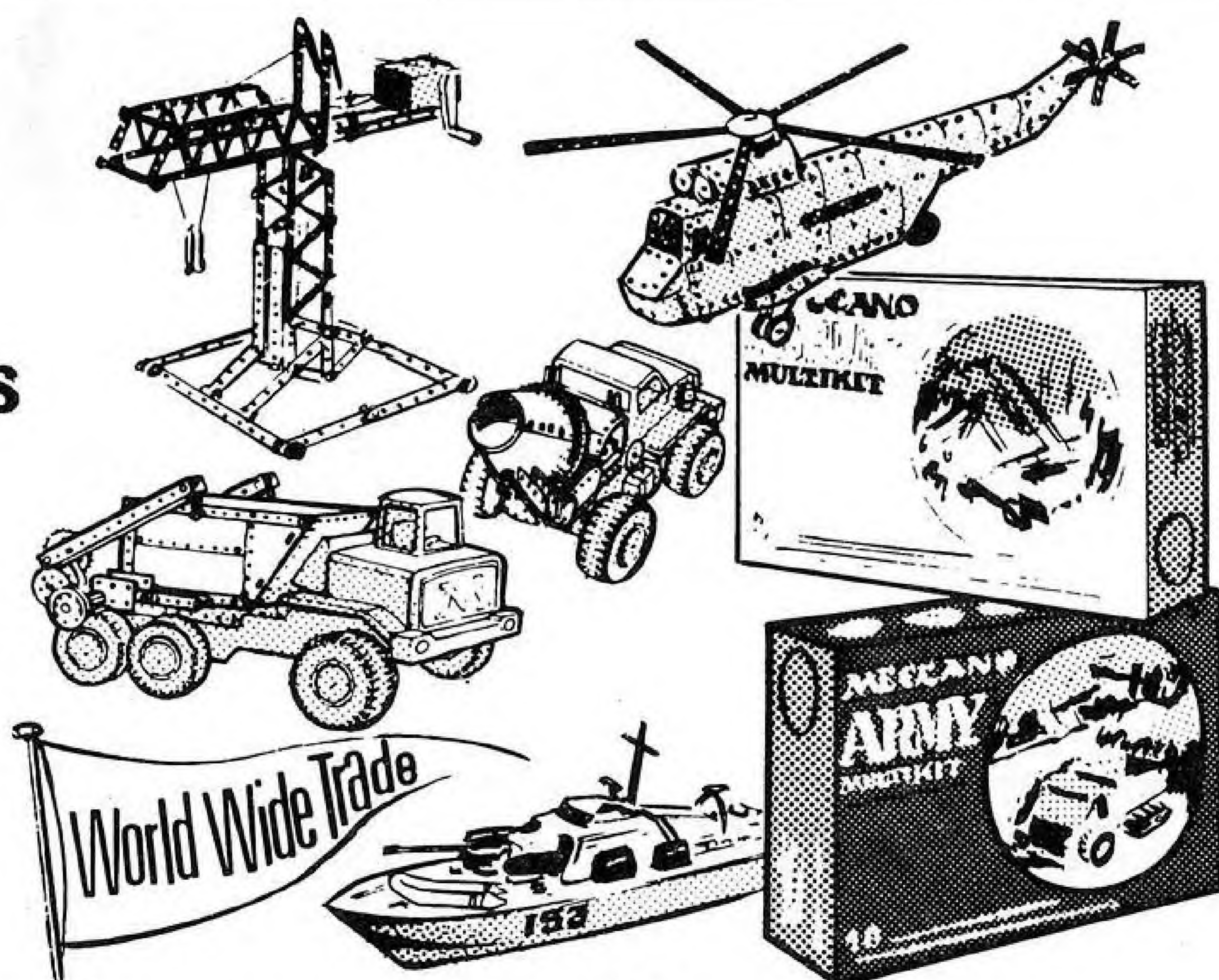
Overseas orders sent U.K. V.A. Tax free.

M.W. Models 165 Reading Road,
Henley-on-Thames, Oxon, RG9 1DP
England. Tel: Henley (049 12) 3342

HOBBIES

for everything the
model maker requires

There's no doubt about
it. For model railway
and Meccano enthusiasts,
a visit to our showroom
is an exciting event.
Full range of Meccano
spare parts always in
stock



Liverpool's leading model and toy store

Lucas's

HOBBIES

Ltd.

7/9 Tarleton St. Liverpool L1 1DS
(off Church St.) 051-709 7562

MECCANO®

SETS & SPARE PARTS

from

YOUR

POST OFFICE

Simply go to your local Post Office, write your order
on the back of a GIRO FORM. Hand it to the clerk
with the necessary remittance.

Make it payable to our GIRO Account No. 25 422 4008
and leave the rest to the Post Office and us!

M.W. MODELS

165 Reading Road, Henley-on-Thames, Oxon, RG9 1DP

MECCANO®

SETS & SPARE PARTS

BY PHONE!

Yes, if you have an ACCESS or
BARCLAYCARD, simply 'phone
your order, giving your name,
address & card number, and
leave the rest to us!

(There is no need to send the card itself).

M.W. MODELS

Telephone: HENLEY (049 12) 3342

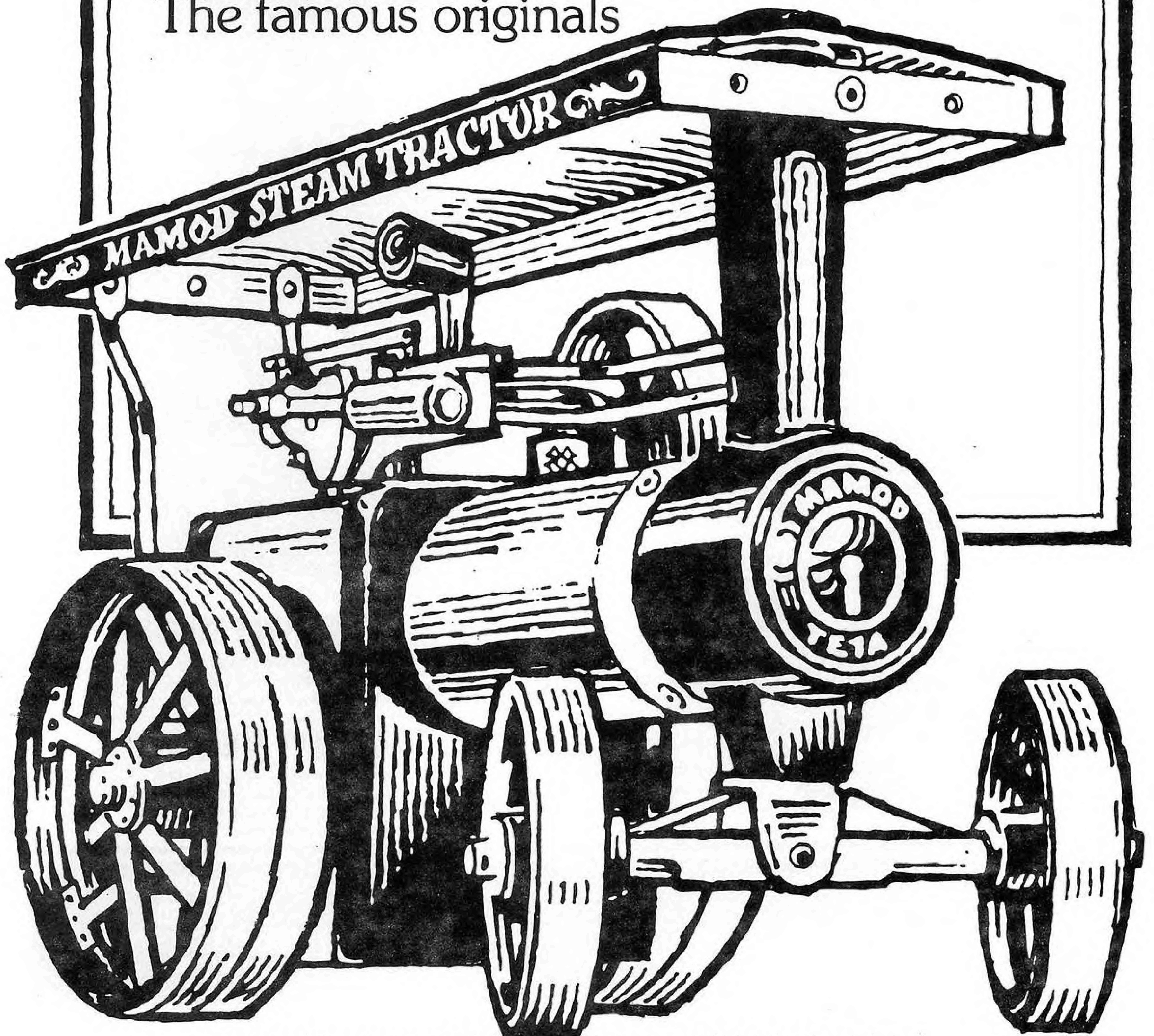
Famous Mamod traction engines, steam rollers, steam wagons and accessories are more than precise, durable working toys.

They're fun models boys of all ages get really steamed up about.

Mamod

And still surprisingly inexpensive at all leading toy shops.

The famous originals



Malins (Engineers) Ltd., Brierley Hill, Staffordshire.

**U.S.
READERS**

JUST 3 OF THE LATEST

**Dinky
TOYS®**

**MULTI-ROLE
COMBAT
AIRCRAFT**

MODEL No. 729



**WITH LINKED
SWING-WING ACTION AND
RETRACTABLE UNDERCARRIAGE**

**BELL
POLICE
HELICOPTER**

Model 732



- Freely rotating rotor blade and rudder blade
- Clear perspex cockpit

211 mm long



**RANGE ROVER
AMBULANCE
Model 268**

- Opening doors and bonnet
- Folding seats
- Opening tailgate
- Casualty on stretcher

109 mm long

**NEW
GREAT
MECCANO
MULTIKIT**

**MECCANO
HIGHWAY
MULTIKIT**



8 DIFFERENT MODELS FOR YOU TO BUILD
IN THE NEW EXCITING COLOUR PHOTO STEP-BY-STEP INSTRUCTION BOOK

**MECCANO
ARMY
MULTIKIT**



10 DIFFERENT MODELS FOR YOU TO BUILD
IN THE NEW EXCITING COLOUR PHOTO STEP-BY-STEP INSTRUCTION BOOK

MECCANO HIGHWAY MULTIKIT

Load up and hit the road! Each Highway Multikit makes 8 great commercial vehicles. Interesting and easy to build – great fun to play with.

MECCANO ARMY MULTIKIT

One kit that makes 10 fantastic army vehicles. Great fun to build – great fun to play with. Kids never get bored with Meccano Multikit – there's so much to do with them!

ANA INTERNATIONAL, INC.

FOR INFORMATION CONTACT:

**6500 DEPOT DRIVE
P.O. BOX 7611
WACO, TEXAS 76710
817-772-4530**

Published and printed by Meccano Limited, Binns Road, Liverpool, L13 1DA, England

MECCANO